

DEPARTMENT OF ENVIRONMENTAL QUALITY

WATER RESOURCES PROTECTION

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These rules take effect 15 days after filing with the Secretary of State.

(By authority conferred on the department of environmental quality by sections 3103 and 3106 of Act No. 451 of the Public Acts of 1994, as amended, being §§324.3103 and 324.3106 of the Michigan Compiled Laws)

R 323.2201 to R 323.2211 of the Michigan Administrative Code are amended and R 323.2212 to R 323.2238 are added to the Code as follows:

PART 22. GROUNDWATER QUALITY

R 323.2201 Definitions; A to L.

Rule 2201. As used in these rules:

(a) "Act" means Act No.451 of the Public Acts of 1994, as amended, being §324.101 et seq. of the Michigan Compiled Laws, and known as the natural resources and environmental protection act.

(b) "Additive" means a substance added to water to enhance its effectiveness for uses such as, but not limited to, cleaning, disinfecting, heating, and cooling. A substance may be added to water directly or indirectly by being added to a process in such a way that it becomes a constituent of the wastewater.

(c) "Aquifer" means a geological formation, group of formations, or part of a formation capable of yielding significant quantities of groundwater to wells or springs.

(d) "Background" groundwater quality means the concentration or level of a substance in groundwater within an aquifer and hydraulically connected aquifers at the site receiving a discharge, if the aquifer has not been impacted by a discharge caused by human activity.

(e) "Cluster well" means a grouping of more than 1 well at a single location where the screen for each well in the group is set either at a different depth within the same aquifer or set in different aquifers separated by a confining or semi-confining layer.

(f) "Controlled application" means the noninjurious application of a substance for its intended purpose in accordance with the manufacturer's recommendations or normally accepted or regulated practices.

(g) "Department" means the department of environmental quality or a local health department that has been certified to exercise the pertinent authority under R 323.2209.

(h) "Designated wellhead protection area" means a specific geographic area which is approved by the department as the surface and subsurface area surrounding a water well or well field that supplies a public water system and through which contaminants are reasonably likely to move toward and reach the water well or well field.

(i) "Discharge" means any direct or indirect discharge of any of the following into the groundwater or on the ground:

(i) Waste.

- (ii) Waste effluent.
- (iii) Wastewater.
- (iv) Pollutant.
- (v) Cooling water.
- (vi) A combination of the items specified in paragraphs (i) to (v) of this subdivision.
- (j) "Discharger" means a person who directly or indirectly discharges any of the following into the groundwater or on the ground:
 - (i) Waste.
 - (ii) Waste effluent.
 - (iii) Wastewater.
 - (iv) Pollutant.
 - (v) Cooling water.
 - (vi) A combination of the items specified in paragraphs (i) to (v) of this subdivision.For a treatment facility that has been or is being closed, the discharger is the person who formerly discharged at the site while using the facility or is the owner of the facility, or both.
- (k) "Domestic activity" means an activity which normally takes place as a result of occupying a household, but which does not include a commercial or industrial activity conducted in a household.
- (l) "Domestic equivalent activity" means an activity at a commercial, municipal, or industrial facility, such as lawn watering, that is comparable to a domestic activity.
- (m) "Effluent" means waste or wastewater during or subsequent to treatment but before discharge.
- (n) "Existing groundwater quality" means the concentration or level of a substance in groundwater within an aquifer and hydraulically connected aquifers at the site receiving the discharge whether or not it is impacted by human activity. A discharge or release by the applicant or a predecessor in interest of the applicant cannot be considered in determining existing groundwater quality.
- (o) "General purpose floor drain" means a point source, such as a pipe, conduit, or other conveyance, that originates in a structure and discharges, or is capable of discharging, a release defined by part 201 or waste or wastewater not authorized under these rules either directly or indirectly to the ground or groundwater.
- (p) "Groundwater" means water below the land surface in a zone of saturation.
- (q) "Hydrogeological report" means a document presenting and interpreting field information or published hydrogeologic information, or both, gathered at a location for the purpose of describing the existing hydrogeologic conditions and predicting the potential impact on waters of the state from a discharge at the location.
- (r) "Influent" means the wastewater received by or generated at a facility before treatment.
- (s) "Injurious" means any damage to or change in the condition of background groundwater quality that causes or may cause groundwater to no longer be fit for 1 or more protected uses.
- (t) "Local health department" means a county, district, or city health department.

R 323.2202 Definitions; M to P.

Rule 2202. As used in these rules:

(a) "Monitoring well" means a well that is specifically designed and located to allow for the collection of hydrogeologic data and representative samples in order to measure the impact of a discharge on groundwater.

(b) "Noncontact cooling water" means water used for cooling that does not come into direct contact with any of the following:

- (i) Raw material.
- (ii) Intermediate product.
- (iii) By-product.
- (iv) Waste product.
- (v) Finished product.

(c) "Nuisance conditions" means conditions that cause a substantial unreasonable interference with another person's use or enjoyment of the person's property, including but not limited to, interference caused by any of the following:

- (i) Odors.
- (ii) Vectors.
- (iii) Noise.
- (iv) Pathogens.
- (v) Changes in aesthetic qualities of groundwater.

(d) "Observation well" means a well that is specifically designed and located to allow for the determination of existing hydrogeological conditions.

(e) "Parameters" means the specific characteristics describing the physical, chemical, biological, and radiological conditions of influent, effluent, or groundwater.

(f) "Part 31" means part 31 of the act, water resources protection, being §§324.3101 to 324.3119 of the Michigan Compiled Laws.

(g) "Part 111" means part 111 of the act, hazardous waste management, being §§324.11101 to 324.11152 of the Michigan Compiled Laws.

(h) "Part 115" means part 115 of the act, solid waste management, being §§324.11501 to 324.11549 of the Michigan Compiled Laws.

(i) "Part 201" means part 201 of the act, environmental remediation, being §§324.20101 to 324.20141 of the Michigan Compiled Laws.

(j) "Part 213" means part 213 of the act, leaking underground storage tanks, being §§324.21301 to 324.21331 of the Michigan Compiled Laws.

(k) "Part 615" means part 615 of the act, supervisor of wells, being §§324.61501 to 324.61527 of the Michigan Compiled Laws.

(l) "Person" means an individual, partnership, corporation, association, governmental entity, or other legal entity.

(m) "Pollutant" means any substance that may adversely affect a protected use of waters of the state.

(n) "Protected uses" means uses of groundwater and interests related to groundwater quality specified in section 3109(1) of the act including all of the following uses:

- (i) Public health, safety, and welfare.
- (ii) Domestic, commercial, industrial, agricultural, recreational, and other uses that are being made or may be made of groundwater.
- (iii) The value or utility of riparian lands.
- (iv) Livestock, wild animals, birds, fish, and aquatic life or plants or the growth or propagation of, and the value in, livestock, wild animals, birds, fish, and aquatic life or plants.

R 323.2203 Definitions; R to W.

Rule 2203. As used in these rules:

(a) "Remediation plan" means a remedial action plan approved by the department under part 115, 201, or 615, a corrective action plan prepared by the qualified consultant and certified professional under part 213, or a corrective action plan or closure plan approved by the department under part 111.

(b) "Sanitary sewage" means treated or untreated wastes that contain only human metabolic wastes or wastes generated and discharged as a result of domestic or restaurant activities.

(c) "Secondary containment facility" means a unit, other than the primary container in which polluting material is packaged or held, which is designed and constructed so that the polluting material cannot escape from the unit by gravity through sewers, drains, or other means directly or indirectly into a sewer system or to the waters of the state.

(d) "Solum" means soil from the surface to a maximum depth of 60 inches.

(e) "Standard" means an effluent or groundwater quality standard established under R 323.2222.

(f) "Substance" means any of the following that may be injurious or that can be used as a parameter to determine water quality:

(i) A naturally occurring or human-produced chemical.

(ii) A solid, liquid, semisolid, dissolved solid or gaseous material.

(iii) A virus or biological organism.

(iv) A metabolite, degradation product, or waste product.

(g) "Surface water" means all waters of the state excluding groundwater, but does not include drainageways and ponds used solely for wastewater conveyance, treatment, or control.

(h) "Total inorganic nitrogen" means the total of ammonia plus nitrate plus nitrite expressed as nitrogen.

(i) "Totals analysis" means the concentration of a substance in a medium such as soil or sediments based on the weight of the substance per dry weight of the medium and usually expressed in milligrams of the substance per kilogram dry weight of the medium.

(j) "Unusable aquifer" means an aquifer that is not a usable aquifer.

(k) "Usable aquifer" means an aquifer, or that portion of a formation hydraulically connected to an aquifer, that is capable of providing water in sufficient quantity and of satisfactory quality to serve 1 or more protected uses. Usable aquifers do not include aquifers from which minerals, oil, or gas is extracted or fluids are injected and regulated by part 615 or part 625 of the act, mineral wells, being §§324.62501 to 324.62518 of the Michigan Compiled Laws.

(l) "Venting" means the recharging of surface water by groundwater.

(m) "Unsaturated soil column" means the depth of unconsolidated material from the ground surface to the top of the highest seasonal groundwater table.

(n) "Waste" means any waste, wastewater, waste effluent, or pollutant that is discharged into water, including any of the following:

(i) Industrial, municipal, and agricultural waste.

(ii) Dredged spoil.

(iii) Solid waste.

(iv) Incinerator residue.

(v) Sewage.

- (vi) Garbage.
- (vii) Sewage sludge.
- (viii) Munitions.
- (ix) Chemical wastes.
- (x) Biological materials.
- (xi) Radioactive materials.
- (xii) Heat.
- (xiii) Wrecked or discarded equipment.
- (xiv) Rock.
- (xv) Sand.
- (xvi) Cellar dirt.

(o) "Wastewater" means liquid waste discharged directly or indirectly into the waters of the state or onto the ground that results from industrial and commercial processes or municipal operations, including liquid or water-carried process waste, cooling and condensing waters, and sanitary sewage.

(p) "Waters of the state" means any of the following:

- (i) Groundwater.
- (ii) Lakes, including the Great Lakes bordering the state.
- (iii) Rivers.
- (iv) Streams.

(v) All other water courses and bodies of water within the jurisdiction of the state, including wetlands as defined by part 303 of the act, wetlands protection, being ? ? 324.30301 to 324.30323 of the Michigan Compiled Laws.

(q) "Well" means a properly designed and constructed hydraulic structure that permits the measurement or withdrawal of groundwater from an aquifer.

R 323.2204 Discharge requirements.

Rule 2204.(1) A person may discharge provided the requirements of this rule are met.

(2) To be authorized under this part, a person shall comply with the following discharge requirements unless otherwise specifically provided:

(a) The discharge shall not be, or not be likely to become, injurious.

(b) The discharge shall not cause runoff to, ponding on, or flooding of adjacent property, shall not cause erosion, and shall not cause nuisance conditions.

(c) The point of discharge shall be located not less than 100 feet inside the boundary of the property where the discharge occurs, unless the discharge is authorized in R 323.2210, R 323.2211, or R 323.2213 or unless a lesser distance is specifically approved by the department in the authorization issued under these rules.

(d) Except for a discharge authorized by R 323.2210, the discharge shall be isolated from

water supply wells as follows:

(i) For a discharge authorized by R 323.2211, R 323.2213, R 323.2215, or R 323.2216, the discharge shall be a minimum of 200 feet from a type I or type IIa water supply well, 75 feet from a type IIb or III water supply well in accordance with Act No. 399 of the Public Acts 1976, as amended, being ? 325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act, and 50 feet from any domestic well in accordance with part 127 of Act No. 368 of the Public Acts of 1978, as amended, being §§333.12701 to 333.12715 of the Michigan Compiled Laws. The department may require a lesser or greater isolation distance in an individual case based on groundwater flow direction, volume, and constituents of contamination of the discharge; geological, surface, and other site conditions; and the degree of threat to the well or wells.

(ii) For a discharge authorized by R 323.2218, the discharge shall be a minimum of 2,000 feet from a type I or type IIa water supply well, 800 feet from a type IIb or III water supply well in accordance with Act No. 399 of the Public Acts 1976, as amended, being ? 325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act, and 300 feet from a domestic well in accordance with part 127 of Act No. 368 of the Public Acts of 1978, as amended, being ? ? 333.12701 to 333.12715 of the Michigan Compiled Laws. The department may authorize a lesser or greater isolation distance in an individual case based on groundwater flow direction, volume, and constituents of the discharge; geological, surface, and other site conditions; and the degree of threat to the well or wells.

(e) The discharge shall be consistent with the requirements of R 323.1041 to R 323.1117.

(f) Except for a discharge authorized under R 323.2222(7)(b) or R 323.2224(2), the discharge shall not create a facility as defined in part 201. A discharge authorized under R 323.2218 for which compliance is measured only in groundwater will not be considered a facility under this provision based on a measurement between the point of discharge and a point of compliance determined according to R 323.2224(1).

(3) For a discharge to meet the requirements of section 3112(1) of the act, authorization must be granted in conformance with the applicable procedural requirements of R 323.2208 and a person shall be authorized by 1 or more of the following:

- (a) An exemption established by R 323.2210.
- (b) A permit by rule established in R 323.2211 or R 323.2213.
- (c) A general permit issued under R 323.2215.
- (d) A permit issued under R 323.2216 or R 323.2218.

R 323.2205 Discharge prohibitions.

Rule 2205.(1) A person shall not discharge without an authorization under R 323.2204.

(2) A person shall not discharge through a general purpose floor drain unless authorized by R 323.2210(v) or under R 323.2215 or R 323.2218.

(3) A person shall not discharge wastewater originating from a structure within 200 feet of an available public sanitary sewer system, except for a discharge of noncontact cooling water or a discharge from a groundwater remediation activity. For sanitary sewage, an available public sanitary sewer system is defined by section 12751(a) of Act No. 368 of the Public Acts of 1978, as amended, being §333.12751(a) of the Michigan Compiled Laws. For any other discharge, the department shall make a determination of availability based on the ability of the public sanitary sewer system to treat the wastewater and the costs associated with providing the treatment. Except for sanitary sewage, this subrule

does not apply to an existing discharge authorized under the provisions of part 31 at the time of adoption of these rules.

R 323.2206 Applicant responsibilities; compliance schedule; standard for municipal wastewater treatment system; renewal, reissuance, or modification of permit establishing effluent or groundwater limitations.

Rule 2206.(1) It is the responsibility of the applicant to provide the information described in these rules as required or necessary for the department to make a decision.

(2) Failure to comply with the terms and conditions of an authorization to discharge granted under this part, failure to comply with an applicable monitoring or reporting requirement, or discharging in excess of an applicable standard is a violation of this part.

(3) The department shall compile and keep on file a central quarterly listing of all dischargers who have exceeded a standard set by these rules for the concentration of a substance in the effluent or groundwater or who have failed to submit a complete compliance monitoring report as required by a permit. The listing shall identify the discharger and the substance or substances that exceeded the effluent or groundwater standard. In addition, the department shall also maintain records describing the actions taken by the department and the discharger in response to an effluent or groundwater standard being exceeded and the time necessary in each case to return the concentration of the substance in the effluent or groundwater to below the standard set by these rules. The listings and records are subject to Act No. 442 of the Public Acts of 1976, as amended, being §15.231 et seq. of the Michigan Compiled Laws, and known as the freedom of information act.

(4) If necessary to secure compliance with this part by a person discharging to groundwater on the effective date of these rules without causing impracticable disruption of the activity causing the discharge, the department may establish a schedule in a permit under which the discharger shall come into compliance with this part during the term of the permit. The department may not authorize a discharge under this subrule unless the discharge meets the requirements of R 323.2204(2)(a).

(5) A wastewater treatment system shall not be subject to a more stringent standard than that contained in a permit during the depreciation or amortization of the facility for the purposes of section 167 or 169, or both, of the tax reform act of 1986, as amended, 26 U.S.C. §167 or §169, or both, but not longer than 10 years from the date of permit issuance, if the treatment system meets all of the following conditions:

- (a) The discharge is appropriately characterized as described in R 323.2220.
- (b) The treatment system is constructed after the effective date of these rules to meet all applicable standards described in R 323.2222.
- (c) The discharge is permitted under R 323.2218.
- (d) The discharge does not create a facility as defined in part 201 at any time during the term described in this subrule.

(6) In the case of effluent or groundwater limitations established under a permit issued by the department before the effective date of these rules, a permit may not be reissued or modified on the basis of a standard described in R 323.2222 that is less stringent than the comparable effluent or groundwater limitation in the previous permit. This restriction does not apply to a standard developed under R 323.2222(2)(c). The department may grant an exception to this subrule, taking into account the state's paramount concern for the protection of its natural resources or the public trust in those resources from pollution, impairment, or destruction, if 1 of the following provisions applies:

(a) A less stringent standard is necessary because of events over which the discharger does not have control and for which there is no available remedy.

(b) The discharger has installed the treatment facilities required to meet the limitation in the previous permit and has properly operated and maintained the facilities, but has been unable to achieve the previous limitation. In this situation, the reissued or modified permit shall contain a standard that reflects the level of pollutant control actually achieved if the standard is not less stringent than would otherwise be required by R 323.2222.

(c) The discharger demonstrates, and the department finds, that the limitation in the prior permit is not economically achievable. In making this demonstration, the discharger shall demonstrate that the cost of maintaining treatment capability and controls in place is not a feasible and prudent alternative to the use of the standard specified in R 323.2222. The department shall specifically solicit public comments on the demonstration in the public notice accompanying the proposed permit reissuance or modification.

(d) The standard specified in R 323.2222 is less stringent than the prior limitation because the risk posed by the substance has been reevaluated based on new scientific information.

R 323.2207 Designated wellhead protection area.

Rule 2207.(1) For a discharge in a designated wellhead protection area, the department shall do both of the following:

(a) Notify a person seeking authorization under R 323.2211 to R 323.2218 that the proposed discharge is in a designated wellhead protection area.

(b) Notify the pertinent public water supply system manager and local health department that a discharge proposed under R 323.2211 to R 323.2218 is in a designated wellhead protection area.

(2) A discharger in a designated wellhead protection area shall do both of the following:

(a) Provide, to the public water supply system manager, a copy of each monitoring report provided to the department under R 323.2225 or R 323.2227.

(b) Notify the pertinent public water supply system manager when a discharge has exceeded an applicable standard. The notification shall be made within 48 hours of a determination by the discharger that an applicable standard has been exceeded.

R 323.2208 Procedural requirements for authorization to discharge.

Rule 2208.(1) The procedural requirements for the issuance of wastewater discharge permits contained in part 21 of the rules implementing part 31 pertaining to a state permit, being R 323.2101 to R 323.2192, apply to an authorization to discharge as specified in this rule.

(2) For an authorization provided under R 323.2210, the requirements pertaining to a state permit contained in R 323.2102 to 323.2105, R 323.2127, R 323.2149, R 323.2155, and R 323.2160 apply unless the requirements are inconsistent with the terms of this part.

(3) For an authorization provided under R 323.2211 and R 323.2213, the requirements pertaining to a state permit contained in R 323.2102 to R 323.2105, R 323.2114, R 323.2127, R 323.2149, R 323.2151, R 323.2155, and R 323.2169 apply unless the requirements are inconsistent with the terms of this part.

(4) For an authorization provided under R 323.2215, the requirements pertaining to a state permit contained in R 323.2102 to R 323.2105, R 323.2115, R 323.2117 to

R 323.2119, R 323.2121, R 323.2122, R 323.2126, R 323.2127, R 323.2130, R 323.2131, R 323.2149, R 323.2150, R 323.2155, R 323.2159, R 323.2160, and R 323.2162 to R 323.2186 and the requirements pertaining to a permit contained in R 323.2191 and R 323.2192 apply unless the requirements are inconsistent with the terms of this part.

(5) For an authorization provided under R 323.2216, requirements pertaining to a state permit contained in R 323.2102 to R 323.2105, R 323.2106, R 323.2108, R 323.2112, R 323.2114, R 323.2115, R 323.2117, R 323.2124, R 323.2126, R 323.2127, R 323.2130, R 323.2131, R 323.2145 to R 323.2147, R 323.2149 to R 323.2151, R 323.2155, R 323.2159, R 323.2160, and R 323.2162 to R 323.2186 apply unless the requirements are inconsistent with the terms of this part.

(6) For an authorization provided under R 323.2218, the requirements pertaining to a state permit contained in R 323.2102 to R 323.2105, R 323.2106, R 323.2108, R 323.2112, R 323.2114, R 323.2115, R 323.2117, R 323.2119, R 323.2121, R 323.2122, R 323.2124, R 323.2126, R 323.2127, R 323.2130, R 323.2131, R 323.2145 to R 323.2147, R 323.2149 to R 323.2151, R 323.2155, R 323.2159, R 323.2160, and R 323.2162 to R 323.2186 apply unless the requirements are inconsistent with the terms of this part.

R 323.2209 Department authorization of local health department to conduct certain activities.

Rule 2209.(1) The department may authorize a local health department to conduct the following activities for the department if the conditions in subrule (2) of this rule are met:

(a) Inspect facilities authorized to discharge under this part or facilities discharging in violation of this part and notify the owner or operator of the facility of violations of this part.

(b) Recommend to the department a decision on an authorization described in R 323.2215 and R 323.2216. Before making the recommendation, the local health department shall follow the procedures described in this part.

(2) To be authorized for the activities described in subrule (1) of this rule, a local health department shall be in compliance with all of the following provisions:

(a) Possess adequate legal authority to conduct the activities authorized.

(b) Possess sufficient funding and adequately trained and experienced staff, as determined by the department, to fully and competently perform the activities to be authorized.

(c) Conduct the activities according to the terms and conditions of this part.

(3) The department shall authorize a local health department to conduct activities under this rule pursuant to all of the following procedures:

(a) To request authorization, a local health department shall provide information determined necessary, and in a manner and at a time specified, by the department. In requesting authorization, the local health department may apply to conduct some or all activities described in subrule (1)(a) of this rule or subrule (1)(b) of this rule, or both.

(b) If the local health department meets the qualifications in subrule (2) of this rule, then the department shall issue a document describing the activities authorized and the terms and conditions of the authorization.

(c) The department shall provide funds, as may be available through monies appropriated for this purpose by the legislature, to assist a local health department in conducting the activities authorized under this rule.

(d) The department may revoke the authority issued under this rule if a local health

department fails to meet the conditions described in subrule (2) of this rule.

(e) A local health department may relinquish authority granted by the department under this rule by written notice to the department.

(4) The department may continue to exercise all of its authority granted by the act and this part notwithstanding a grant of authority to a local health department under this rule.

(5) The department shall provide assistance and training to local health departments authorized under this rule in order to ensure effective and consistent implementation of this part.

R 323.2210 Items permitted to be discharged without permit.

Rule 2210. A person may discharge the following without a permit that would otherwise be required by part 31 if the discharge meets the requirements of R 323.2204:

(a) Sanitary sewage in either of the following circumstances if the sanitary sewage is not mixed with other waste:

(i) The discharge is less than 1,000 gallons per day and the disposal system is approved by the county, district, or city health department that has jurisdiction in accordance with either the requirements of the local sanitary code or the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O. Box 30630, Lansing, Michigan 48909.

(ii) The discharge is less than 6,000 gallons per day, the disposal system is designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and the system is approved by the county, district, or city health department that has jurisdiction. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O. Box 30630, Lansing, Michigan 48909.

(b) Controlled application of any of the following:

(i) An authorized substance to suppress dust. The following are authorized substances:

(A) Water.

(B) Calcium chloride.

(C) Lignosulfate products.

(D) Emulsified asphalt or resin stabilizers.

(E) Vegetable by-products.

(ii) A deicing substance.

(iii) A substance for a natural resource or right-of-way maintenance program.

(iv) A substance for a domestic activity.

(v) A commercially manufactured pesticide or fertilizer for its intended use.

(c) Stormwater, other than from a secondary containment facility, when discharged through surface infiltration.

(d) Stormwater from a secondary containment facility that does not contain leaks or spills if the stormwater is inspected to ensure it meets the standards established in R 323.2222.

(e) Water from a well used temporarily for dewatering at a construction site if the water pumped does not create a site of environmental contamination under part 201.

(f) A discharge from an animal feeding operation that has less than 5,000 animal units if the discharge is determined by the director of the department of agriculture or his or her designated representative, to be in accordance with generally accepted agricultural and management practices, as defined in Act No. 93 of the Public Acts of 1981, as amended, being §§286.471 to 286.474 of the Michigan Compiled Laws, and known as the Michigan right to farm act. For purposes of this rule, 5,000 animal units is equal to 5,000 head of slaughter or feeder cattle, 3,500 mature dairy cattle, 12,500 swine weighing more than 25 kilograms or approximately 55 pounds, 50,000 sheep or lambs, 2,500 horses, 275,000 turkeys, 150,000 laying hens or broilers, or 25,000 ducks. An animal feeding operation is a lot or facility, or series of lots or facilities under 1 ownership which are adjacent to one another or which use a common area or system for the disposal of wastes, that meets both of the following conditions:

(i) Animals, other than aquatic animals, have been, are, or will be stabled or confined and fed or maintained for a total of 45 calendar days or more in any 12-month period.

(ii) Crops, vegetation, forage growth, or postharvest residues are not sustained in the normal growing season over the portion of the lot or facility where animals are confined.

(g) Less than 50 gallons of wastewater per day from a commercial animal care facility.

(h) Observation or monitoring well development or evacuation water.

(i) Potable water used for a domestic or domestic equivalent activities other than sanitary sewage disposal.

(j) Step test or pump test water from any of the following:

(i) A potable well or well used to develop a potable water supply.

(ii) A well producing water that meets state or federal criteria for use as potable water.

(iii) A test well where the quality of the test well discharge water is equal to or better than the background groundwater quality of the aquifer receiving the discharge.

(k) Exfiltration from sanitary sewer collection systems.

(l) Wastewater from a heat pump that has a heat exchange capacity of 300,000 Btu per hour or less if there is no chemical additive to the system.

(m) Wastewater from a portable power washer when used in either of the following circumstances:

(i) By the occupant of a household for washing buildings, vehicles, or other surfaces associated with the domestic occupation of the household.

(ii) By a commercial operator or in a commercial or industrial setting to remove nonpolluting substances from vehicles or surfaces when no additives are used and the washing process does not add significant pollutants to the water.

(n) Swimming pool drainage and backwash water discharged in accordance with

sections 12521 to 12534 of Act No. 368 of the Public Acts of 1978, as amended, being §§333.12521 to 333.12534 of the Michigan Compiled Laws.

(o) Water treatment filter backwash water if disposal is in accordance with plans and specifications approved by the department under Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act.

(p) Carpet cleaning wastewater discharged by a noncommercial operator or by a commercial operator at a site receiving wastewater from not more than 1 location where carpet cleaning has occurred.

(q) Less than 10,000 gallons per day of noncontact cooling water that does not contain additives if the source of the cooling water is any of the following:

- (i) A municipal water supply.
- (ii) A water supply meeting state or federal criteria for use as potable water.
- (iii) Another source of water meeting the standards of R 323.2222.
- (iv) Another source approved by the department.

(r) Land application of process sludge from a wastewater treatment facility treating sanitary sewage when applied in accordance with applicable state and federal law.

(s) Land application of process sludge from an industrial or commercial wastewater treatment facility when authorized under R 299.4101 to R 299.4922, the administrative rules implementing part 115.

(t) Placement of other solid waste on the ground when authorized under part 115. This provision does not apply to the disposal of wastewater generated through the operation of a facility licensed under part 115.

(u) Wastewater associated with an environmental response activity described in any of the following paragraphs if the discharge is to the plume of groundwater contamination, including an area 100 feet hydraulically upgradient of the edge of the plume, and any additive used in the treatment process that is not part of the contamination plume meets the standards of R 323.2222:

(i) A pump test discharge that does not change the physical dimensions of the plume in groundwater or, if the dimensions are changed, the changes are accounted for in the design of the final groundwater remediation plan.

(ii) A remedial investigation, feasibility study, or remedial action discharge that is at or below the residential criteria authorized by section 20101a(1)(a) of the act, if applicable, or section 21304(a) of the act, if applicable.

(iii) A discharge for a remedial investigation, feasibility study, or remedial action above the residential criteria authorized by section 20101a(1)(a) of the act, if applicable, or section 21304(a) of the act, if applicable, if a remediation investigation, feasibility study, or remediation plan has been approved by the department division that has compliance oversight. The remediation plan shall indicate that the treatment system is designed and will be operated so that contaminated groundwater will eventually meet the appropriate land use-based cleanup criteria authorized by section 20120a(1)(a) to (d) of the act, if applicable, or section 21304(a) of the act, if applicable.

(v) Precipitation and snow melt drainage off vehicles discharged through a general purpose floor drain in a parking structure in which maintenance activities do not occur.

(w) A discharge that has been specifically authorized by the department under a permit if the permit was not issued under this part.

(x) A discharge that occurs as the result of placing waste materials on the ground in compliance with a designation of inertness issued under part 115 or leaving contaminated materials in place in compliance with part 201 or 213.

(y) A discharge that has been determined by the department to have an insignificant potential to be injurious based on volume and constituents. In making the determination, the department shall follow the public notice and comment procedures of R 323.2117 and R 323.2119. The department may establish criteria, limitations, or conditions applicable to the discharge to ensure that it meets the terms of this subdivision.

R 323.2211 Permit by rule; notification.

Rule 2211. A person may discharge any of the following if the requirements of R 323.2204 and R 323.2212 are met:

(a) Sanitary sewage if the volume of the septic tank or tanks is 6,000 gallons or more or if the flow is more than 6,000 gallons per day, but less than 10,000 gallons per day if the following provisions are complied with, if applicable:

(i) The sanitary sewage is not mixed with other wastes.

(ii) The disposal system is designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and the system is approved by the county, district, or city health department that has jurisdiction. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O. Box 30630, Lansing, Michigan 48909.

(iii) For a disposal system constructed, reconstructed, or expanded after adoption of these rules, the discharge is monitored by a flow measurement device. The discharger shall record the average daily flow on a weekly basis and the total flow annually in a log that shall be available for review upon request by the department or the county, district, or city health department that has jurisdiction. A report of the average daily flows and annual total flow shall be submitted to the department by January 31 of each year for the preceding calendar year.

(b) Less than 500 gallons per day of wastewater from a laundromat which is open to the general public and which does not contain a dry cleaning operation if all of the following requirements are met:

(i) The wastewater is discharged from a system that has a minimum of 2 1,000-gallon septic tanks in series followed by disposal to a tile field.

(ii) The tanks are pumped when the sludge level reaches 25% of the tank volume.

(iii) An operational lint filter is maintained on the laundry wastewater discharge line to the system.

(iv) The tile field has been designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and is approved by the local county, district, or city health department that has jurisdiction or the department. Copies of the publication may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O. Box 30630, Lansing, Michigan 48909.

(v) The sanitary sewage generated at the facility is routed to the same septic tank as the laundry waste.

(vi) The septic tank is equipped with an effluent filter.

(c) More than 10,000 gallons per day of noncontact cooling water if it does not contain an additive and the source of the cooling water is any of the following:

- (i) A municipal water supply.
- (ii) A water supply meeting state or federal criteria for use as potable water.
- (iii) Another source of water meeting the standards of R 323.2222.
- (iv) Another source of water approved by the department as meeting the conditions of R 323.2204.

(d) Less than 50,000 gallons per day of fruit and vegetable washwater if the following provisions are met, if applicable:

- (i) The source of the water is any of the following:
 - (A) A municipal water supply.
 - (B) A water supply meeting state or federal criteria for use as potable water.
 - (C) Another source of water meeting the standards of R 323.2222.
 - (D) Another source of water approved by the department as meeting the conditions of R 323.2204.
- (ii) If the wastewater contains an additive, the department is notified of the additive in the notification required in R 323.2212 and the discharge does not cause the groundwater to exceed the standard of R 323.2222 for the additive.

(e) Wastewater from a portable power washer used by a commercial operator or in a commercial or industrial setting whether or not occurring within 100 feet of the property boundary if the following requirements are met, as applicable:

- (i) The source of the water is any of the following:
 - (A) A municipal water supply.
 - (B) A water supply meeting state or federal criteria for use as potable water.
 - (C) Another source of water meeting the standards of R 323.2222.
 - (D) Another source of water approved by the department as meeting the conditions of R 323.2204.

(ii) If other than a household soap or detergent readily available to the consumer is used as an additive, the additive is used for its intended purpose and according to manufacturer's recommendations and label directions.

(iii) Washing is limited to the removal of dirt and grime from the exterior of a vehicle, equipment, or stationary source. A vehicle's exterior does not include its undercarriage. Dirt and grime does not include a substance that was contained or transported in the vehicle as product or waste material.

(iv) The discharge does not cause runoff of wastewater or the deposition of waste materials onto adjacent properties.

(v) The discharge does not cause the groundwater to exceed a standard specified in R 323.2222.

(vi) The discharge is limited to 1,000 gallons of wastewater per month per acre of area in which the discharge occurs.

(vii) If the discharger is a commercial operator who discharges at various locations, a log is kept of discharges for a period of 3 years from the date of the discharge. The log shall include the date, location, and additive used for each discharge and the item washed. The log shall be readily available for inspection and copying at any reasonable time by a peace officer or, upon presentation of credentials, an authorized representative of the department or city, county, or district health department that has jurisdiction.

(f) Pump test water associated with environmental remediation that is discharged outside the plume of contamination if the discharge meets the standards of R 323.2222.

(g) Water that results from the hydrostatic testing or flushing of a new pipeline or

pressure testing of a new tank if both of the following provisions have been met:

- (i) An additive has not been used.
- (ii) The source of the washwater is any of the following:
 - (A) A municipal water supply.
 - (B) Another water supply that meets state or federal criteria for use as potable water.
 - (C) Another source of water meeting the standards of R 323.2222.
 - (D) Another source of water approved by the department as meeting the conditions of R 323.2204.
- (h) More than 50, but less than 1,000, gallons per day of wastewater from a commercial animal care facility if all of the following provisions have been met:
 - (i) The source of the water is any of the following:
 - (A) A municipal water supply.
 - (B) Another water supply that meets state or federal criteria for use as potable water.
 - (C) A source of water meeting the standards of R 323.2222.
 - (D) Another source of water approved by the department as meeting the conditions of R 323.2204.
 - (ii) The department is notified of any additive in the notification required by R323.2212 and the discharge does not cause the groundwater to exceed the standard established by R 323.2222 for the additive.
 - (iii) The discharge does not occur within 200 feet of a surface water body.

R 323.2212 Discharge notification.

Rule 2212.(1) A person is authorized to discharge under R 323.2211 if the department is notified of the discharge under this rule.

- (2) A person shall notify the department under this rule at the following times:
 - (a) Before the discharge.
 - (b) When there is a change in the information required in the notification form described in subrule (3) of this rule.
 - (c) Five years from the date of the previous notification if the discharge is continuing.
- (3) A person shall provide notice on a form approved by the department. At a minimum, the notice shall contain all of the following information:
 - (a) Date of the notification.
 - (b) Facility name and address.
 - (c) The discharge address, if different from the facility, and the location identified by county, section, township, and range.
 - (d) Authorized contact person's name, address, and telephone number.
 - (e) The permit or exemption number and issuance date for any groundwater discharge permit or exemption previously issued to the discharger.
 - (f) The type of wastewater discharged and a description of the discharge.
 - (g) For discharges authorized by R 323.2211(f) and R 323.2213(5), a description of the treatment system designed to meet the standards of R323.2222.
 - (h) Standard industrial classification (SIC) code.
 - (i) Method of wastewater disposal, such as irrigation or seepage lagoon.
 - (j) Any additive and the amount used.
 - (k) Discharge volume or application rate in appropriate units.
 - (l) Dates of discharge and schedule of discharge, as appropriate.
 - (m) Two legible site maps drawn to scale that have a north orientation arrow. Site map 1 shall indicate the discharge location in relation to property boundaries on a topographic

map. The township and county name in which the discharge area is located shall be included on site map 1. Site map 2 shall indicate the discharge area and the distance from property boundaries. Major roads and streets shall be included on all site maps.

(n) Name, address, and telephone number of the owner of the property where the discharge is to occur if the owner is other than the discharger.

(o) If the discharge is to property owned by a person other than the discharger, a written authorization to discharge signed by the property owner.

(p) A determination of whether the discharge will occur within 1/4 mile of a known site of groundwater contamination, other than for a remedial action for which the notification form is being submitted, and an evaluation of whether the discharge will impact the existing plume of contamination at the site.

(q) Signature and certification by the discharger or a person authorized to act for the discharger, as described in R 323.2114, that the discharger has identified and considered steps to avoid or minimize the use and discharge of pollutants, that all information submitted is true, accurate, and complete, and that the discharge meets the requirements of this part.

R 323.2213 Permit by rule authorizing discharge upon department certification.

Rule 2213.(1) Wastewater described in this rule may be discharged if the requirements of R 323.2204 and R 323.2214 are met.

(2) A person may discharge less than 10,000 gallons per day of noncontact cooling water that contains an additive if the department is notified of the additive in the notification required by R 323.2212 and the discharge does not cause the groundwater to exceed the standard of R 323.2222 for the additive.

(3) A person may discharge less than 10,000 gallons per day of egg-washing facility wastewater if all of the following provisions are satisfied:

(a) The source of the water is any of the following:

(i) A municipal water supply.

(ii) A water supply meeting state or federal criteria for use as potable water.

(iii) Another source of water meeting the standards of R 323.2222.

(iv) Another source of water approved by the department.

(b) If the wastewater contains an additive, the department is notified of the additive in the notification required by R 323.2212 and the discharge does not cause the groundwater to exceed the standard established by R 323.2222 for the additive.

(c) The discharger minimizes the discharge of proteinaceous matter, such as egg yolks, and other wastes to the groundwater to control odors and prevent nuisance conditions.

(4) A person may discharge cooling water if all of the following provisions are satisfied:

(a) The discharge is less than 5,000 gallons per day.

(b) If the wastewater contains an additive, the department is notified of the additive in the notification required by R 323.2212 and the discharge does not cause the groundwater to exceed the standard established by R 323.2222 for the additive.

(c) The discharger submits, as part of the notification required by R 323.2212, wastewater characterization which demonstrates that the discharge will not exceed standards of R 323.2222.

(d) The material cooled does not vary substantially from that used in providing the wastewater characterization required by subdivision (c) of this subrule.

(e) The discharger characterizes the wastewater annually and submits records of that annual characterization in the notification required by R 323.2212(2)(c).

(5) A person may discharge wastewater which is associated with a department approved groundwater remediation and which is discharged outside the plume of contamination if all of the following provisions are satisfied:

(a) If the discharge is associated with the investigative phase of a remediation or active groundwater remediation, the discharge is conducted in compliance with all applicable parts of the act.

(b) The discharge is treated to meet the standards of R 323.2222. The discharger shall submit to the department a description of how the proposed treatment system will achieve the standards of R 323.2222.

(c) The remedial action shall include a groundwater extraction system designed and operated to prevent any portion of the plume above approved cleanup criteria from migrating beyond an approved zone of influence. The approval for the location of the zone of influence is the responsibility of the department division that has compliance oversight.

(d) The discharger provides an accurate and complete verification at the time of notification, as required in R 323.2214, that the discharge meets the requirements of part 31, this part, and part 111, 115, 201, 213, or 615, as applicable. Verification shall be provided in the form of a memorandum from the chief, or his or her designated representative, of the department division responsible for compliance oversight of the remediation.

(e) A performance monitoring plan shall be included in the remediation plan submitted to the department division responsible for compliance oversight at the facility. The plan shall include the following:

(i) Groundwater monitoring to verify that the standards of R 323.2222 are being met in groundwater. The monitoring shall meet the requirement of R 323.2224(1)(c).

(ii) At least twice weekly remediation system effluent monitoring capable of verifying that the treatment system can comply with the standards of R 323.2222. After demonstrating for not less than 90 days that the treatment system is capable of meeting the standards of R 323.2222, the discharger may apply to the department division responsible for compliance oversight for a reduced frequency of effluent monitoring until the remediation is completed according to the act.

(f) Effluent and groundwater sampling required to verify compliance with this subrule shall be collected and analyzed at a frequency indicated in the performance monitoring plan. The frequency of monitoring and reporting must be approved by the department division responsible for compliance oversight, but shall not be less than once per year.

(g) Performance monitoring data shall be submitted to the department division responsible for compliance oversight.

(h) The discharger shall, at all times, maintain in good working order all treatment or control facilities or systems installed or used by the discharger to achieve compliance with the terms and conditions of this rule. If the discharger is unable to maintain compliance with the terms and conditions of this rule, then the discharger shall provide the notification and conduct the compliance activities described in R 323.2227.

R 323.2214 Conditions for department certification.

Rule 2214.(1) A discharge is authorized under R 323.2213 if the department is notified of the discharge under R 323.2212.

(2) For a discharge authorized by R 323.2213(5), the following information, in addition to the information required by subrule (1) of this rule, shall be provided:

(a) Site map 1, required in R 323.2212(3)(m), shall include a description of the location of

drinking water wells that is adequate to identify each water supply formation within ½ mile of the discharge. A copy of the well logs for each drinking water well included on the map shall also be provided with the notification.

(b) Site map 2 required in R 323.2212(3)(m) shall include all of the following information:

- (i) Groundwater flow direction.
- (ii) Extent of contamination plume.
- (iii) Calculated capture zone.
- (iv) Location of the groundwater extraction and interception system.
- (v) Location of all observation and monitoring wells.
- (vi) A description of the treatment system indicating how it will produce an effluent that will meet the standards of R 323.2222.

(3) In order to discharge, a person must receive a certification from the department which verifies that the discharge is authorized under this part. Within 60 calendar days of receiving a complete notification form required by this rule, the department shall issue a certification or indicate why the discharger is not authorized to discharge under this rule.

R 323.2215 General permit.

Rule 2215.(1) Upon a determination by the department that a certain category of discharges is appropriately and adequately controlled by a general permit, the department may issue a general permit under this rule.

(2) A discharge covered by a general permit issued under this rule shall meet all of the following conditions:

- (a) Meet the conditions in R 323.2204(2).
- (b) Involve the same or substantially similar types of operations.
- (c) Be of the same type of wastes.
- (d) Require the same effluent limitations or operating conditions.
- (e) Require the same or similar monitoring and reporting.

(3) To qualify for a certificate of coverage for a general permit issued pursuant to this rule, an applicant shall certify that the applicant has identified and considered steps to minimize the use and discharge of pollutants authorized to be discharged by the general permit.

(4) The department shall periodically publish the names of persons who have received a certificate of coverage for a general permit issued under this rule.

R 323.2216 Permits for specific discharges.

Rule 2216.(1) A wastewater described in this rule may be discharged under a permit issued by the department in compliance with R 323.2217 if the conditions of R 323.2204 are met.

(2) A person may discharge less than 20,000 gallons per day of sanitary sewage that has been treated by a system described in subdivision (a) or (b) of this subrule if the treatment system is operated to achieve optimum treatment efficiencies for the specified design as follows:

(a) The discharge receives treatment by a constructed wetland and associated treatment system that meets all of the following requirements:

(i) A minimum of 2 septic tanks installed in series precedes the constructed wetland. The septic tanks shall have a minimum combined volume of 2 times the daily design flow. The outfall to the constructed wetland shall be equipped with a septic tank effluent filter.

(ii) The system shall have a treatment process to enhance nitrification prior to discharge to the constructed wetland.

(iii) If the discharge is expected to have high concentrations of oil and grease, such as sanitary sewage from a food service establishment, then the discharge shall be treated to remove oil and grease.

(iv) The system shall have a minimum of 2 wetland cells to allow for isolation or maintenance of individual cells.

(v) Each wetland cell shall have an aspect ratio, which is length to width ratio, of between 2:1 and 4:1.

(vi) The constructed wetland shall have a composite bottom liner in compliance with R 323.2237. The bottom of the wetland cell shall be constructed to be level.

(vii) The wetland cell filter media shall consist of ½-inch to 1-inch washed gravel with 100% passing the 1.0-inch sieve and a maximum of 3% passing the ½-inch sieve.

(viii) The filter media shall not be less than 18 inches or more than 30 inches in depth.

(ix) The effective water depth in the wetland cell shall be maintained between a range of 2 to 6 inches below the filter media surface.

(x) The constructed wetland shall be insulated with at least 6 inches of mulch or other comparable substitute and designed to protect against freezing.

(xi) The filter surface area hydraulic loading rate is not more than 1.2 gallons per square foot per day.

(xii) The design retention time shall not be less than 7 calendar days.

(xiii) Indigenous or sterile wetland vegetation, such as bulrushes, common reeds, and cattails, shall be planted on a 1-foot grid across each wetland cell.

(xiv) Wetland vegetation shall be cultivated to maximize the rooted depth throughout the gravel filter media.

(xv) The system shall have the capability to recirculate effluent back into the influent end of the system when additional flow is needed into the system.

(xvi) The wetland cell shall discharge to a tile field designed and constructed in accordance with the provisions of the publication entitled "Michigan Criteria for Subsurface Sewage Disposal," April 1994, and approved by the county, district, or city health department that has jurisdiction. Copies of the criteria may be obtained without charge at the time of adoption of these rules from the Michigan Department of Environmental Quality, Drinking Water and Radiological Protection Division, P.O. Box 30630, Lansing, Michigan 48909. If the county, district, or city health department that has jurisdiction chooses not to review the tile field design, then the department shall review and approve the system under this subrule.

(b) The discharge is treated by an alternative treatment system or combination of systems that is determined by the department to provide a similar quality effluent to the treatment system specified in subdivision (a) of this subrule.

(c) For a treatment system described in subdivision (a) or (b) of this subrule, if flow is more than 10,000 gallons per day, then the effluent shall be monitored in accordance with R 323.2232(a),(b),(e), and (f).

(3) A person may discharge less than 50,000 gallons per day of sanitary sewage if all of the following provisions are satisfied:

(a) The sanitary sewage is not mixed with other waste.

(b) The discharge meets the isolation distance requirements specified in R 323.2204(2)(d)(ii).

(c) The sanitary sewage is treated by a treatment system in accordance with R 323.2230 and R 323.2231.

(d) The discharge is limited and monitored in accordance with the requirements of R 323.2232.

(4) A person may discharge less than 20,000 gallons per day of laundromat wastewater if the laundromat is open to the general public, does not contain a dry cleaning operation, and all of the following requirements are met:

(a) The discharge is treated by a lagoon treatment system that meets the requirements of R 323.2231(1)(a) to (e).

(b) The wastewater treatment system is operated in accordance with R323.2231(1)(g) to (j) and maintained in accordance with R 323.2231(k).

(c) Disposal is by means of low-rate application in accordance with R 323.2233 and utilizing spray irrigation under pressure to enhance volatilization of organic constituents in the discharge.

(d) The discharge limitations and monitoring requirements are as follows:

(i) Flow shall be measured on a daily basis.

(ii) The discharge will be monitored on an annual basis for all of the following:

(A) The pH.

(B) Chemical oxygen demand (COD).

(C) Conductivity.

(D) Volatile organics using environmental protection agency (EPA) test method 8260 or other method approved by the department for this purpose.

(E) Aluminum.

(F) Arsenic.

(G) Cadmium.

(H) Total chromium.

(I) Hexavalent chromium.

(J) Copper.

(K) Lead.

(L) Nickel.

(M) Zinc.

(N) Total phosphorus.

(O) Ammonia nitrogen.

(P) Nitrate nitrogen.

(Q) Nitrite nitrogen.

(R) Sodium.

(S) Chloride.

(T) Potassium.

EPA test method 8260 is adopted by reference in these rules and is contained in the EPA document entitled "Test Methods for the Evaluation of Solid Waste, Physical-Chemical Methods," SW-846, 3rd Edition, September 1986, as updated through the effective date of these rules. SW-846 is available for inspection at the Lansing office of the department of environmental quality, waste management division. The document and updates may be purchased from the United States Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or the Michigan Department of Environmental Quality, Waste Management Division, P.O.Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$319.00, plus shipping and handling.

(iii) The application rate shall be measured in inches per day and in inches per week and recorded twice per month. The application rate shall not be more than 1 inch per day or 3 inches per week.

- (e) The discharger shall report monitoring results in compliance with R 323.2225.

R 323.2217 Procedures applicable to permit issued under R 323.2216.

Rule 2217.(1) The department shall issue a permit for a discharge described in R 323.2216 under the terms of R 323.2208 and this rule.

(2) An application for a discharge permit to be issued under this rule shall be made on a form determined by the department. An application under this rule shall be administratively complete before it is considered by the department for decision. An administratively complete application shall consist of all of the following:

- (a) Sufficient information for the department to determine whether the requirements of R 323.2216 are met.

- (b) A demonstration that the applicant has provided notice of the proposed discharge consisting of a copy of the notice which contains, at a minimum, all of the following information:

- (i) The name and address of the applicant.

- (ii) A concise description of the applicant's activities and operations that result in the discharge identified in the application.

- (iii) The location of the proposed or existing discharge identified in the application.

- (iv) The date upon which the applicant will apply to the department for a permit under this part. The date shall not be later than 30 calendar days after the date of the notice.

- (v) A statement that interested parties can provide comments on the application to the department by sending material to the address, and in the manner, indicated in the form described in this subrule. The statement will further provide that information received by the department within 20 calendar days of the indicated application date will be considered by the department in deciding upon the application.

- (c) A certification that the applicant has identified and considered steps to avoid or minimize the use and discharge of pollutants authorized to be discharged by the permit issued under R 323.2216.

(3) The department shall make a decision on the application within 60 calendar days of the date on which the administratively complete application is received by the department or the date which is indicated in the public notice as the submission date, whichever is later.

R 323.2218 Discharge permits.

Rule 2218.(1) The department shall issue a permit for a discharge other than a discharge meeting the requirements of R 323.2210 to R 323.2217, but meeting the requirements of R 323.2204, under the terms of R 323.2208 and this rule.

(2) To be permitted under this rule, a discharge shall meet the requirements of R 323.2204, R 323.2220 to R 323.2222, and, if applicable, R 323.2233 and R 323.2237. In addition, the proposed system for treating the wastewater to be discharged shall have sufficient hydraulic capacity and detention time to adequately treat the anticipated organic and inorganic pollutant loading. To demonstrate that these requirements are met, at the time of application a permit applicant shall submit a basis of design for the treatment system. The basis of design shall include all of the following information:

- (a) The volume of wastewater to be treated per unit of time.

- (b) An analysis of the influent, or a description of the anticipated influent, including the substances to be treated to meet the requirements of R 323.2222 and the concentrations of

the substances.

(c) A description of the existing or proposed treatment, or both, including, where applicable, the following:

(i) The treatment methods before discharge, based on treatment classifications for certified operators developed under R 323.1251 to R 323.1258 and implementing part 31 for an industrial or commercial entity or developed under R 299.2911 to R 299.2927 and implementing part 41 of the act for a sewage treatment works operated by a municipality.

(ii) To the extent applicable, engineering plans depicting all of the following:

- (A) A schematic flow diagram.
- (B) Information on unit processes.
- (C) Flow rates.
- (D) Design hydraulic capacity.
- (E) Pollutant loading.
- (F) Detention times.
- (G) Sizing of treatment units.
- (H) Design calculations for major treatment units.
- (I) A description of sludge management.

(iii) A discharge management plan that includes, where applicable, all of the following information:

- (A) Maximum daily and annual discharge volumes.
- (B) The total discharge area.
- (C) Scheduled maintenance.
- (D) Vegetative cover control and removal.
- (E) Load and rest cycles.
- (F) Application rates.
- (G) Means for even distribution of waste or wastewater.
- (H) Strategies for periods of adverse weather.
- (I) Monitoring procedures.
- (J) Other pertinent information.

(d) For a discharge of sanitary sewage, unless these rules provide otherwise, the treatment system shall be consistent with the standards in chapter 10 of the publication entitled "Engineering Reports and Facility Plans of the Recommended Standards for Wastewater Facilities," 1997 edition. The standards in chapter 10 are adopted by reference in these rules. The standards may be purchased from Health Education Services, P.O. Box 7126, Albany, New York 12224, or from the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$12.00, plus shipping and handling.

(3) An application for a discharge permit to be issued under this rule shall be made on a form determined by the department. An application under this rule shall be administratively complete before it is considered by the department for decision. Administrative completeness is determined as follows:

(a) An application for a discharge that has not been previously permitted shall include all of the following information:

- (i) The basis of design as required by subrule (2) of this rule.
- (ii) An evaluation of the feasibility of alternatives to discharge to the groundwater in accordance with R 323.2219.
- (iii) The wastewater characterization as required by R 323.2220.
- (iv) The hydrogeological report as required by R 323.2221.
- (v) If a standard applicable to the discharge is to be determined under R 323.2222(5), the

information necessary to determine that standard, including whether a substance is a hazardous substance under part 201.

(vi) If applicable, the monitoring plan as specified by R 323.2223.

(vii) If applicable, a description of the discharge methods and information that demonstrate that the requirements of R 323.2233 will be met.

(viii) If applicable, information that demonstrates that the requirements of R 323.2237 will be met.

(b) An application for the renewal of a permit where the discharge is proposed to be modified in quantity, effluent characterization, or treatment process from that previously permitted shall include all of the following:

(i) The request for reissuance specified in R 323.2151.

(ii) An updated submission of the items listed in subdivision (a) of this subrule corresponding to the differences between the proposed discharge and the discharge previously permitted.

(iii) All of the following information:

(A) A narrative description of the facility's history of compliance with effluent and groundwater permit limits and sampling frequency.

(B) If permit limits were exceeded, the steps taken to bring the facility into compliance.

(C) An evaluation of whether there are general trends in the effluent or groundwater sampling data indicating that the discharge is approaching permit limits.

(D) An updated site map.

(E) A current groundwater contour map and a narrative evaluation of whether changes to the existing groundwater monitoring system are warranted and the rationale for any proposed change.

(F) The most recent groundwater quality results from all wells on site.

(G) The most recent effluent quality results.

(H) The most recent static water levels and groundwater elevations from all wells on site.

(c) An application for the renewal of a permit where the discharge will consist of the same quantity, effluent characterization, and treatment process as previously permitted shall include all of the following:

(i) The request for reissuance specified in R 323.2151.

(ii) A certification by the discharger that the discharge will consist of the same quantity, effluent characterization, and treatment process as previously permitted.

(iii) The information required by subdivision (b)(iii) of this subrule.

(d) A discharger who proposes to modify the quantity or effluent characteristics of a discharge shall notify the department of the proposed modification before it occurs. If the department determines the proposed modification is minor based on the quantity or quality of the discharge, then the department may modify the permit as requested and include new terms or conditions that may be necessary to ensure that the terms of R323.2204 are met. If the department determines that the proposed modification is significant based on the quantity or quality of the discharge, then the discharger shall submit an application for reissuance under the terms of subdivision (b) of this rule.

(e) A discharger who proposes to modify the treatment process of a discharge shall notify the department of the proposed modification before it occurs. Unless the department notifies the discharger within 30 calendar days that the proposed modification may affect compliance with limitations on the quality or quantity of the discharge, the discharger may make the modification. If the department notifies the discharger and determines that the proposed modification is minor based on the quantity or quality of the discharge, then the department may modify the permit as requested and include new terms or conditions that

may be necessary to ensure that terms of R 323.2204 are met. If the department notifies the discharger and determines that the proposed modification is significant based on the quantity or quality of the discharge, then the discharger shall submit an application for reissuance under the terms of subdivision (b) of this subrule.

(4) A discharge authorized under this rule shall meet the conditions of this subrule. The department may waive the conditions of subdivision (a) or (b) of this subrule, individually or collectively, if the department determines that the purpose of the subdivision to be waived has been met.

(a) Within 30 calendar days of completion of construction of treatment facilities, a discharger shall provide, to the department, certification by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan Compiled Laws, and known as the occupation code, that a quality control and quality assurance program was utilized and that the facilities constructed were built consistent with standard construction practices to comply with the permit and this part.

(b) A discharger shall have an operation and maintenance manual for the wastewater treatment facility. The manual shall be used by the certified operator of the facility as a guide for facility operation and maintenance. The operation and maintenance manual shall include all of the following information:

(i) The function, start-up, shutdown, and periodic maintenance procedures for each unit process and item of mechanical and electrical equipment.

(ii) A description of the appropriate response or facility adjustment to minimize the impact of emergency situations with the potential to affect the discharge or compliance with the permit so as to facilitate rapid implementation of a correct response during an emergency.

(iii) A monitoring program to monitor process efficiency.

(iv) The details of how inspections will be conducted and a schedule for the inspection of collection system and pump stations, where applicable.

(v) The periodic maintenance procedures for the collection system and pump stations, where applicable.

(vi) Procedures for routine maintenance and inspection of lagoons and equipment used for irrigation, where applicable, and the documentation of maintenance and inspection.

(vii) A listing of environmental regulations, other than this part, that apply to operation of the wastewater treatment facility.

(c) A discharger shall monitor the discharge and its effect as specified in R 323.2223.

(d) A discharger shall report monitoring results as specified in R 323.2225.

(e) A discharger shall close the wastewater treatment and discharge area as specified in R 323.2226.

R 323.2219 Evaluation of feasibility of alternatives to discharge to groundwater.

Rule 2219.(1) An evaluation of the feasibility of alternatives to discharge to the groundwater required by R 323.2218(3)(a)(ii) shall contain, at a minimum, an analysis of the feasibility of items contained in this rule. Feasibility includes the practical ability to implement the alternative and a comparison of the cost of the alternative to its benefits.

(2) At a minimum, alternatives to the discharge that shall be considered are minimizing the volume and toxicity of the wastewater, recycling wastewater, connecting to a municipal sanitary sewer system, and discharging to surface water. Alternatives for minimizing the volume and toxicity of wastewater include pollution prevention opportunities, including the following:

(a) Equipment or technology modifications.

- (b) Process or procedure modifications.
- (c) Reformulation or redesign of products.
- (d) Substitution of raw materials.
- (e) Improvements in housekeeping, maintenance, training, or inventory control.
- (3) At a minimum, the following treatment systems shall be considered for substances determined to be in the discharge by the characterization required by R 323.2220:
 - (a) For a metal, the following:
 - (i) Flocculation.
 - (ii) Settling.
 - (iii) Oxidation.
 - (iv) Filtration.
 - (v) Ion exchange
 - (vi) Reverse osmosis.
 - (vii) Electrolytic recovery.
 - (b) For a volatile substance, the following:
 - (i) Carbon adsorption.
 - (ii) Air stripping.
 - (iii) Aeration.
 - (c) For a nonvolatile substance, the following:
 - (i) Sorption.
 - (ii) Settling.
 - (iii) Filtration.
 - (d) For a substance that degrades biologically, biological treatment in a lagoon, tank, or biological reactor or through controlled land treatment.

R 323.2220 Characterization of waste or wastewater to be discharged.

Rule 2220.(1) Before a permit can be issued under R 323.2218, an applicant shall properly characterize the waste or wastewater to be discharged. To properly characterize the waste or wastewater, the applicant shall determine the pollutants that may be present in the waste or wastewater in light of the process by which it is generated. The applicant shall use the methods described in this rule to make the determination.

(2) Samples of effluent collected to determine the presence of inorganic substances shall be unfiltered.

(3) For a substance for which there is an analytical method approved by the department for purposes of monitoring under this part, the waste or wastewater shall be representatively sampled using sampling procedures specified in the EPA document entitled "Test Methods for the Evaluation of Solid Waste, Physical-Chemical Methods," SW-846, 3rd Edition, September 1986, as updated through the effective date of these rules and analyzed using analytical procedures specified in either SW-846 or the publication entitled "Guidelines Establishing Test Procedures for the Analysis of Pollutants," 40 C.F.R. Part 136, or other methods approved by the department for purposes of monitoring under this part. SW-846 and updates and the guidelines are adopted by reference in these rules and are available for inspection at the Lansing office of the department of environmental quality, waste management division. The documents may be purchased from the United States Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$319.00 and \$36.00, respectively, plus shipping and handling.

(4) Reporting levels shall be those approved by the department as the lowest level routinely quantifiable with acceptable precision and accuracy by standard laboratory methods. Not less than 4 discrete samples are necessary to be considered representative, unless a lesser number is approved by the department.

(5) For any other substance that may be present, an estimate of the substance concentration in the discharge shall be made with a mass balance calculation or other estimate approved by the department. The estimate shall use the annual average use rate for the substance and annual average discharge volume, except when an alternative is approved by the department.

(6) For a facility not yet operating, the discharger shall characterize the anticipated discharge using the best available information. The discharger shall identify the source of the information in the application.

(7) The department may require the characterization of sludge generated by the wastewater treatment process as it relates to the ability of the discharge to meet the standards of R 323.2222 as a condition of authorizing a discharge under these rules. The characterization shall be done according to the procedures described in subrule (3) of this rule.

(8) The department may require the characterization of other environmental media affected in the treatment of wastewater as a condition of authorizing a discharge under these rules. The characterization shall be done according to the procedures described in subrule (3) of this rule.

(9) The department may waive the requirements of this rule if the nature of the material to be characterized is sufficiently well understood to ensure that the conditions of R 323.2204(2)(a) will be met.

R 323.2221 Hydrogeological report.

Rule 2221.(1) Before obtaining a permit authorized under R 323.2218, an applicant shall provide a hydrogeologic report that meets the requirements of this rule.

(2) Except as provided in subrule (6) of this rule, a hydrogeological report shall be in compliance with all of the following provisions:

(a) Describe the regional hydrogeologic conditions, including regional and local geology and surface and groundwater conditions, over an area sufficient to allow the department to determine the acceptability of discharging at the site under part 31 and this part as described in subrule (4) of this rule.

(b) Define the areal and vertical extent and physical properties of the site earth materials that assimilate and transmit the discharge.

(c) Determine whether the discharge is to a usable aquifer, an unusable aquifer, or groundwater not in an aquifer. For an aquifer, determine the groundwater flow direction, groundwater velocity, 3-dimensional flow path of the discharge within the aquifer, interconnection between aquifers, and background and existing groundwater quality. For groundwater not in an aquifer, determine that the hydraulic or other physical properties, or both, are such that the formation would not be considered an aquifer.

(d) Identify whether the discharge will occur within an established designated wellhead protection area or may occur within a proposed wellhead protection area.

(e) If the discharge is to be monitored under R 323.2223(2), provide sufficient information for the department to determine the acceptability of a proposed monitoring program.

(3) Before initiating a hydrogeologic report required by subrule (1) of this rule, the applicant may submit to the department a work plan for the development of the hydrogeologic report.

(a) The department shall approve, or recommend modifications to, the work plan within 45 calendar days of its receipt. If the applicant does not receive a written approval or recommendation within 45 calendar days of receipt by the department, then the work plan shall be considered approved.

(b) A work plan shall contain all of the following information:

(i) A map indicating the surface geology of the area with the discharge location identified.

(ii) A map indicating the topography of the area with the discharge location identified.

(iii) Logs of domestic wells adequate to characterize each water supply formation within $\frac{1}{2}$ mile in all directions from the discharge. A map shall be provided that correlates each well log to a specific map location.

(iv) A map delineating an established or proposed designated wellhead protection area that may be affected by the discharge.

(v) For all proposed observation wells to be drilled on-site, all of the following information:

(A) Number of wells.

(B) Location.

(C) Depth.

(D) Drilling method.

(E) Well construction materials.

(F) Well development method.

(vi) For all proposed soil borings on-site, all of the following information:

(A) Number of soil borings.

(B) Location.

(C) Depth.

(D) Drilling and plugging method.

(vii) A description of all physical testing to be done to identify soil properties and aquifer characteristics and locations where testing is to occur.

(viii) A groundwater sampling and analysis plan meeting the requirements of R 323.2223(2)(a).

If a map is required, it shall be drawn to scale and have a north orientation arrow.

(c) If conditions not anticipated in an approved work plan are encountered in the field while collecting information for the hydrogeologic report, then the person collecting the information may contact the department to obtain approval of the changes necessary to the original work plan. Modifications may be approved verbally by the department. Written confirmation of all changes shall be provided by the discharger within 10 working days of verbal approval by the department.

(4) All of the following are specific elements of a hydrogeologic report necessary to allow the determination required of the department by subrule (1) of this rule:

(a) Soil borings or other test methods to determine the composition of subsurface materials, locate usable aquifers, and determine the thickness of the usable aquifer. Soil boring logs shall contain all of the following information:

(i) Soil and rock descriptions.

(ii) Method of sampling.

(iii) Sample depth.

(iv) Date of boring.

(v) Water level measurements.

(vi) United States geological survey ground elevation.

(vii) Soil test data.

(viii) Standard penetration number calculated in accordance with the method specified in the standard penetration test, ASTM D1586-84, which is adopted by reference in

R 323.2238.

- (b) Testing of the unsaturated zone sufficient to determine both of the following:
 - (i) The ability of site earth materials to percolate and transmit the volume of liquids resulting from the discharge.
 - (ii) The vertical and horizontal extent of mounding resulting from the discharge.
- (c) Well and field testing data sufficient to determine all of the following:
 - (i) Based on not less than 3 wells in the aquifer receiving the discharge, the groundwater flow direction, depth to groundwater, and existing groundwater quality of the aquifer receiving the discharge.
 - (ii) Interconnections between the aquifers receiving the discharge and other aquifers in the vicinity of the discharge location.
 - (iii) Horizontal hydraulic conductivity of the aquifer receiving the discharge to allow calculation of groundwater flow velocity.
 - (iv) The vertical gradients within the aquifer if the discharge is to be monitored under R 323.2223(2).
- (d) Data indicating both of the following groundwater quality parameters at the site:
 - (i) Specific conductance as an indication of dissolved solids.
 - (ii) Concentration of all of the following substances for inorganic groundwater chemistry comparison of water quality:
 - (A) Cations of calcium, sodium, magnesium, potassium, and iron.
 - (B) Anions of chloride, sulfate, and bicarbonate.
 - (C) The pH.
 - (D) Any additional substances present or likely to be present in the proposed discharge.
- (e) If groundwater on the site or adjacent to the site is contaminated so that either property is a facility as defined by part 201, and if the extent or magnitude of the contamination could be affected by the discharge, information as described in this subrule. If the contamination is on the site, then the hydrogeologic report shall contain a delineation of the portion of the aquifer contaminated and a description of each substance that exceeds regulatory criteria. If contamination is on an adjacent property, then the hydrogeologic report shall include notice that the contamination is known to exist. The department may require further information on the nature of contamination on the adjacent property if, as a result of other information in the hydrogeological report, the department determines there is a significant likelihood that the extent or magnitude of that contamination could be affected by the discharge.
- (f) For dischargers proposing land treatment under R 323.2233 to meet the standards contained in R 323.2222, an evaluation of site earth material and intended crop sufficient to support the application under R 323.2233.
- (g) Supporting information, including all of the following information:
 - (i) A general description of the geology of the surrounding area and how it relates to the geology and hydrogeology of the discharge location, including formations used as water supplies in the area.
 - (ii) A narrative description of the hydrogeologic data collected and interpretation of the data as it relates to satisfying the requirements of this rule.
 - (iii) Cross sections showing a 2-dimensional representation of the geology of the site sufficient to reflect the site geology and hydrogeology.
 - (iv) A map of the site, drawn to scale with a north arrow, which indicates the surveyed locations of soil borings, observation and monitor wells, and test pits and other areas of physical testing and which has a groundwater contour overlay that indicates groundwater flow direction with a maximum contour interval of 1 foot. The top of well casings shall be

surveyed and referenced to United States geological survey data accurate to 0.01 foot by a land surveyor licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code.

(v) A map of the surrounding area that shows the direction of surface drainage and all of the following within ½ mile of the discharge:

- (A) Representative private water supply wells.
- (B) All municipal water supply wells.
- (C) Irrigation and disposal wells.
- (D) Lakes.
- (E) Ponds.
- (F) Streams.
- (G) Springs.
- (H) Wetlands.

(vi) Information describing all pertinent current and historical land use practices at the site of discharge and at properties adjacent to the site of discharge. Land use is pertinent for purposes of this subdivision if it could be impacted by the discharge or could impact the discharge.

(vii) If groundwater monitoring is required under R 323.2223(2), a proposed groundwater monitoring system which includes at least 1 cluster well located hydraulically downgradient of the discharge and which meets the conditions of R 323.2223(2).

(viii) All data collected during the field investigation and calculations and test results used to determine aquifer properties.

(5) All test wells that are not included as part of the permanent groundwater monitoring program for the discharge, as required by R 323.2223, shall be removed and plugged according to approved procedures provided in part 127 of Act No. 368 of the Public Acts of 1978, as amended, being §§323.12701 to 323.12715 of the Michigan Compiled Laws, or part 625 of the act, mineral wells, being §§324.62501 to 324.62518 of the Michigan Compiled Laws.

(6) The department may waive all or portions of the requirements of this rule if the applicant demonstrates, to the department's satisfaction, that the purposes of this part can be met without submittal of all hydrogeologic information described in this rule.

R 323.2222 Discharge standards.

Rule 2222.(1) Except as provided in R323.2206(4), a discharge authorized by a permit issued under R 323.2218 shall not exceed the standards contained in this rule when measured as indicated. For purposes of this rule, compliance with the standards in this rule when measured in the groundwater shall be determined as described in R 323.2224.

(2) A discharge that contains a substance that is capable of being treated by the actions of soil, soil microorganisms, or plants shall be limited as follows:

(a) A discharge that contains ammonia, nitrate, or nitrite shall be at a concentration that is less than either of the following standards:

(i) Five thousand micrograms per liter (ug/l) of total inorganic nitrogen, and not more than 500 ug/l nitrite, as measured in the effluent and groundwater.

(ii) Five thousand micrograms per liter (ug/l) of total inorganic nitrogen, and not more than 500 ug/l nitrite, as measured in the groundwater and an effluent standard indicated in the permit that can be reasonably shown by the applicant to result in meeting the groundwater standard.

(b) A discharge that contains phosphorous shall be at a concentration that is less than

5,000 ug/l as measured in the effluent, unless the department determines that either of the following alternative concentrations is appropriate:

- (i) If a body of surface water is within 1,000 feet hydraulically downgradient of the discharge, then the concentration shall be less than 1 of the following standards:
 - (A) One thousand ug/l as measured in the effluent.
 - (B) One thousand ug/l as measured in the groundwater and an effluent standard that can be reasonably shown by the applicant to result in meeting the groundwater standard.
 - (C) A groundwater or effluent standard indicated in the permit that is determined by the department as necessary to protect surface waters as required by R 323.1041 to R 323.1117.
- (ii) If a body of surface water is not less than 1,000 feet downgradient of the discharge, a concentration measured in the effluent or groundwater, or both, that has been demonstrated by the applicant to protect surface waters as required by R 323.1041 to R323.1117.
- (c) A substance other than ammonia, nitrate, nitrite and phosphorus that can be demonstrated by the applicant to qualify under this subrule shall be at a concentration less than either of the following standards:
 - (i) The standard established for the substance in subrules (3) to (7) of this rule as measured in the effluent and groundwater.
 - (ii) The standard established for the substance in subrules (3) to (7) of this rule as measured in the groundwater and an effluent standard indicated in the permit which can be reasonably shown by the applicant to result in the groundwater standard being met.
- (3) A discharge containing a substance indicated in the following subdivisions shall be at a concentration that is less than the standard indicated:
 - (a) Aluminum, 150 ug/l.
 - (b) Chloride, 250,000 ug/l.
 - (c) Sodium, 150,000 ug/l.
 - (d) Sulfate, 250,000 ug/l.
 - (e) Iron, 300 ug/l.
 - (f) Manganese, 50 ug/l.

Compliance with this standard shall be determined in the effluent or groundwater, as selected by the applicant and specified in the permit.

(4) The allowable concentration for total trihalomethanes shall be 20% of the concentration at which a facility as defined by part 201 would be created. The allowable concentration shall be measured in the effluent and groundwater. To determine total trihalomethanes, a discharge shall be assessed by summing the concentrations of the following substances if found to be present:

- (a) Chloroform.
 - (b) Bromodichloromethane.
 - (c) Dibromochloromethane.
 - (d) Bromoform.
- (5) A discharge containing a substance not described in subrule (2)(a) or (b), (3), or (4) of this rule shall be limited as follows:
- (a) If the substance is an inorganic substance not described in subrule (2)(a) or (b) or (3) of this rule, then the concentration of the substance in the groundwater shall not exceed a concentration $\frac{1}{2}$ way between the background groundwater quality and the concentration at which the site would be a facility as defined by part 201. Background groundwater quality for this purpose shall be determined by upgradient wells located pursuant to the hydrogeological report described in R 323.2221. The discharger shall notify the department if the concentration of the inorganic substance in groundwater exceeds the background

groundwater quality determined under R 323.2221. An initial notification at the time when the condition first exists fulfills the discharger's obligation of notifying the department. The department will notify the discharger of the excessive concentration of the inorganic substance if the department becomes aware of it before notice from the discharger.

(b) If the substance is an organic parameter for which a treatment technology standard is established for the substance under R 323.2229, then the following provisions apply, as applicable:

(i) If the concentration of the substance in the effluent exceeds the treatment technology standard, then the discharger shall take initial response as required by R 323.2228. The initial response concentration established in this paragraph may be modified under R 323.2222(2)(c)(ii) based on the concentration in the groundwater established in paragraph (ii) of this subdivision.

(ii) The concentration of the substance in groundwater shall not exceed the treatment technology standard. Measurement for this purpose shall be according to R 323.2224, except that R 323.2224(2) shall not apply.

(c) If the substance is an organic parameter for which there is a standardized or EPA-approved analytical method and if a treatment technology based standard has not been determined under R 323.2229, then the following provisions apply, as applicable:

(i) The concentration of the substance in the effluent shall not exceed that concentration, if it occurred in the groundwater, a facility as defined by part 201 would exist.

(ii) If the substance is detected in groundwater, then the discharger shall take initial response as required by R 323.2228. Measurement for this purpose shall be according to R 323.2224, except that R 323.2224(2) shall not apply.

(d) If the substance is an organic parameter for which there is no standardized or EPA-approved analytical method, then the discharge shall be controlled by limiting the volume of the substance used by the discharger. The volume shall result in a discharge that has a concentration of the substance, as determined by use of a mass balance equation, which does not exceed the concentration at which a facility as defined by part 201 would be created.

(e) If there is insufficient information concerning the substance to determine the criteria described in subdivision (a), (c), or (d) of this subrule, then the substance shall not be discharged, except pursuant to subrule (7) of this rule.

(6) If the standard determined under subrule (5) of this rule is below the detection limit as determined by the department for this part, then the department may take 1 of the following actions:

(a) Deny the application if the risks associated with the inability to detect the substance at concentrations below the detection limit are determined by the department to be unacceptable.

(b) Require the discharger to demonstrate that the concentration in the discharge is not above, and cannot be above, the standard by estimating the concentration of the substance in the discharge as described in R 323.2220(5) or by monitoring the internal processes for the substance.

(c) Establish a standard in the permit at the detection limit as determined by the department for the purposes of compliance with this subrule.

(7) The department may approve a standard different from the standards established in subrules (2) to (6) of this rule under any of the following circumstances:

(a) The discharge is to groundwater in an unusable aquifer or not in an aquifer.

(b) The groundwater affected by the discharge vents to surface water and all of the following conditions are met:

(i) Venting of groundwater affected by the discharge to surface water is demonstrated by a hydrogeologic report meeting the requirements of R 323.2221.

(ii) Uses of the surface water are protected in accordance with R323.1041 to R 323.1117.

(iii) Except as provided in paragraph (v) of this subdivision, the distance between the point of discharge and the point of venting to surface water is less than 1,000 feet.

(iv) Deed restrictions, on a form approved by the department, preventing the withdrawal and use of the groundwater for all protected uses that would be impacted by the discharge have been recorded with the register of deeds for all property, including the property of the discharger, downgradient from the discharge to the point of venting.

(v) A discharge otherwise meeting the conditions in this subrule that occurs at more than 1,000 feet from the point of venting to surface water may be authorized if the discharger owns all property between the point of discharge and the point of venting and if the department determines that alternative methods of wastewater disposal are not economically or technically feasible, that a prudent alternative does not exist, and that the discharge promotes the public health, safety, and welfare in light of the state's paramount concern for the protection of its natural resources.

(c) The department may issue a permit that has a limit that is higher than the standard established by subrules (2) to (6) of this rule, if all other conditions of this part are met and if the applicant demonstrates either of the following:

(i) Background groundwater quality exceeds the standard established in this rule for any substance and the discharge does not increase the concentration of the substance in the groundwater. A permit issued under this subdivision may limit a substance in the discharge in order to reflect changes in background groundwater quality or municipal water supply quality.

(ii) The source of the water is a municipal water supply delivered in compliance with Act No. 399 of the Public Acts of 1976, as amended, being ? 325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act, the water exceeds the standard established in this rule for the substance, and the discharge does not increase the concentration of the substance in the groundwater above the concentration of the municipal water supply. A permit issued under this subdivision may limit a substance in the discharge in order to reflect changes in background groundwater quality or municipal water supply quality.

(d) If an applicant demonstrates that existing groundwater quality exceeds the standard established in this rule for total inorganic nitrogen, then a permit may be issued by the department that has a higher limit than the standard established in this rule if the limit is not more than the state drinking water standard established under Act No. 399 of the Public Acts of 1976, as amended, being ? 325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act, the concentration of total inorganic nitrogen in the discharge does not increase the concentration of total inorganic nitrogen in the groundwater, and all other pertinent conditions of this part are met. A permit issued under this rule may include a limit on total inorganic nitrogen in order to reflect improvement in existing groundwater quality.

(e) A standard that has a limit that is higher than the limit set in subrules (2) and (4) to (7) of this rule may be established by the department in an individual case if the department determines that the standard set in subrules (2) and (4) to (7) of this rule is not economically or technically feasible, that a prudent alternative does not exist, and that establishing a higher limit is consistent with the promotion of the public health, safety, and welfare in light of the state's paramount concern for the protection of its natural resources. In approving a permit with a limit established under this subdivision, the department may prescribe criteria,

limitations, or conditions as the department deems necessary to ensure that the conditions of R 323.2204 are met.

(f) A standard that is more stringent than the standards described in this rule may be established in an individual case if the department determines that readily available and cost-effective treatment technology allows a more stringent standard to be met.

(g) A standard that is more stringent than the standards described in this rule may be established for the protection of other environmental media, where applicable, if consistent with the requirements of all of the following:

(i) R 323.1041 to R 323.1117.

(ii) Protection of soil by preventing the creation of a facility as defined by part 201 or the violation of cleanup criteria established in section 21304(a) of the act, being 324.21304(a) of the Michigan Compiled Laws, if applicable.

(iii) R 336.1901, air contaminant and water vapor prohibitions.

(h) If 2 or more substances are present and known to result in toxicological interaction, the interactive effects shall be considered in establishing standards for those substances.

R 323.2223 Discharge monitoring.

Rule 2223.(1) Monitoring required by an authorization under this part shall be conducted in a manner, at a frequency, and for a substance the department specifies, under rule or permit, is necessary to assess compliance with these rules. Analytical methods used in the monitoring shall be in compliance with R 323.2220(3). Monitoring of an indicator parameter may be used in monitoring if the technique accurately reflects the effect of the discharge. An indicator parameter shall be representative of the environmental fate of a substance or substances in the discharge and shall be 1 of the following:

(a) A substance in the discharge.

(b) A decomposition material of a substance.

(c) A sampling parameter that can be directly correlated to the concentration of another substance in the discharge.

(2) Groundwater monitoring shall include the collection of water quality and water level data from a well or group of wells that are specifically designed to adequately assess the impact of the discharge on groundwater as described in R 323.2224. The design of the groundwater monitoring system shall be based on all of the following:

(a) The hydrogeologic report.

(b) Considerations of the local geology.

(c) Groundwater conditions specific to each site.

(d) The type of discharge.

(3) At the time of application for a permit under R 323.2218, an applicant shall propose, for department approval, a groundwater sampling and analysis plan that establishes criteria for collecting representative samples of groundwater. The plan shall contain all of the following information:

(a) The number and location of wells to be included in the groundwater monitoring system.

(b) For each well, the depth and screened interval for each monitor well. The screened interval shall be referenced to United States geological survey data.

(c) Well construction materials and installation techniques.

(d) Sampling frequency.

(e) A list of substances to be sampled.

(f) Sampling procedure, including all of the following:

(i) The method and volume of water removed from each well during sampling.

- (ii) Steps taken to prevent cross contamination between wells.
- (iii) Sample handling and preservation methods.
- (iv) Laboratory analysis method.
- (v) Laboratory method detection level.
- (vi) Quality assurance and quality control program.
- (g) A description of the techniques used to present and evaluate groundwater quality monitoring data.
- (h) A description of the method used to collect static water levels and present groundwater flow data. Static water level precision shall be to 0.01 foot.
- (4) A discharger shall design, construct, and abandon a monitoring well as follows:
 - (a) A monitoring well shall be located at a depth where the screened interval will intercept the path of any discharge from the site in the groundwater as required by the department as specified by these rules.
 - (b) If the thickness of the aquifer receiving the discharge is more than 20 feet, then at least 1 hydraulically downgradient monitor well location shall contain a cluster well. The separation and length of the screens shall be such that discrete groundwater potentiometric surface data can be collected to determine vertical gradients within the aquifer.
 - (c) Monitor well construction and sampling equipment materials shall not influence the sampling results for the substances sampled.
 - (d) A monitor well shall be designed to collect an adequate volume of water to allow analysis for the complete set of substances determined by the department as indicative of the discharge.
 - (e) Annular space between the bore hole and the well shall be grouted from the ground surface to 2 feet above the well screen so as to prevent vertical leakage of the fluids between the casing and the drill hole. When drilling through confining layers, a discharger shall install double-cased wells to prevent the hydraulic connection of fluids between formations above and below the confining layer.
 - (f) A well shall be protected against the introduction of contaminants by means of a locking device or by another method approved by the department.
 - (g) Either a well shall be vented so that accurate static water levels may be collected or else well caps shall be removed a sufficient amount of time before measurement so that representative static water levels can be measured. Care shall be taken to prevent the introduction of contaminants through vents.
 - (h) The well casing shall be protected against accidental damage and shall be adequately marked to prevent accidental damage.
 - (i) A well shall be labeled so that the discharger's name, and address and the well number can be determined through the life of the permit.
 - (j) If a monitoring well is to be permanently abandoned, a discharger shall follow the plugging procedures in part 127 of Act No. 368 of the Public Acts of 1978, as amended, being §§ 323.12701 to 323.12715 of the Michigan Compiled Laws.
 - (k) A discharger shall receive department approval before installing, replacing, redeveloping, or abandoning a monitoring well that is part of the discharge monitoring program.
- (5) If necessary to measure compliance with a standard established under R 323.2222(7)(g), the department may specify, by rule or permit, the monitoring of media in addition to groundwater.
- (6) A monitoring program under this rule shall be evaluated by the department on the basis of the threat the discharge poses to protected uses given all of the following factors:
 - (a) The substances in the discharge.

- (b) The volume of the discharge.
- (c) The amount of information related to predicting the impacts of a discharge developed through the hydrogeological report prepared under R 323.2221.

R 323.2224 Groundwater monitoring location; approval by department.

Rule 2224.(1) Except as provided in subrule (2) of this rule, the department shall approve, under R 323.2223(2), a groundwater monitoring location for determining compliance with the standards of R 323.2222 if the location meets all of the following criteria:

- (a) It provides a practicable and effective point of measurement.
 - (b) It is located on property owned or leased by the discharger and under the discharger's control.
 - (c) It is not more than 150 feet from the point of discharge.
- (2) The department may approve, under R 323.2223(2), an alternative groundwater monitoring location to determine compliance with R 323.2222 if all of the following requirements are met:
- (a) The location is less than 1,000 feet from the point of discharge.
 - (b) The alternative location provides a practicable and effective point of measuring compliance with R 323.2222.
 - (c) The substance to be measured in the groundwater is either of the following:
 - (i) A metal or other inorganic substance.
 - (ii) A substance that the applicant demonstrates can be treated by the actions of soil, soil microorganisms, or plants.
 - (d) The discharger has not previously met the standard for the same discharge at a closer point of compliance.
 - (e) The discharger demonstrates all of the following:
 - (i) Meeting the standard at a closer point of compliance is economically burdensome or technically impractical.
 - (ii) The concentration of the substance in the groundwater between the point of compliance that would be determined under subrule 1 of this rule and the point of compliance determined under this subrule shall not exceed that which would require remedial action pursuant to part 201 for the land use classification of the property on which the discharge is located.
 - (iii) The discharger demonstrates that the adoption of an alternative or alternatives described in R 323.2219(1) to (3) is not prudent given the state's paramount concern for the protection of its natural resources or public trust in the resources from pollution, impairment, or destruction. In determining whether the discharger has successfully demonstrated that the adoption of an alternative or alternatives is not prudent, the department shall specifically solicit and consider public comment on the issue and make the determination in writing.
 - (f) The discharger has in place and implements all of the following:
 - (i) A written pollution prevention policy that promotes the elimination of waste or reduction of waste at the source of generation.
 - (ii) A pollution prevention policy that is signed by a responsible official and available to the department upon request.
 - (iii) Periodic pollution prevention assessments that identify opportunities for eliminating waste at the source.
 - (iv) Pollution prevention goals that specify the environmental media types of pollution

prevention to be prevented or reduced, implementation activities, and projected time frames.

(v) The recording of progress in achieving pollution prevention goals.

(g) The point of compliance and all land surface area over groundwater from the point of discharge hydraulically downgradient to the point of compliance that does not meet the standards in R 323.2222 are located on property under the ownership and control of the discharger. For purposes of this subrule, a public or private transportation or utility right-of-way may be considered under the ownership and control of the discharger if the right-of-way owner gives written consent.

(h) Groundwater affected by the discharge that exceeds the standards of R323.2222 is located outside of a designated wellhead protection zone or, if a wellhead protection zone has not been designated, not less than 2,000 feet from an existing type I water supply well as defined in Act No. 399 of the Public Acts of 1976, as amended, being §325.1001 et seq. of the Michigan Compiled Laws, and known as the safe drinking water act, not less than 300 feet laterally from adjacent property that has a land use classification of residential, and not less than 800 feet laterally from adjacent property that has a land use classification of commercial or industrial. The department may authorize a lesser distance if, based upon hydrogeologic information contained in the report required under R 323.2221, there is no potential for impact to a wellhead protection zone or the use of groundwater on affected property.

(i) A discharger may not use groundwater for human consumption if the groundwater does not meet state or federal standards for use as a potable water supply. A discharger shall record a restrictive covenant or other similar legal instrument describing this restriction against using groundwater for human consumption. Upon approval of the department, a discharger or subsequent owner of the property may modify the restrictive covenant or similar legal instrument to allow use of the groundwater for drinking if all groundwater affected by the discharge meets state or federal standards for use as a potable water supply.

(3) If the department grants an alternative point of compliance in accordance with this rule, then the department shall provide copies of hydrogeologic information upon which the decision is based to the county, district, or city health department that has jurisdiction.

R 323.2225 Monitoring reports.

Rule 2225. A discharger is required to provide monitoring reports to the department under this part at a time and in a manner specified by the department in a permit or other applicable authorization. The department shall provide a copy of a monitoring report upon request by any interested party.

R 323.2226 Cessation of discharge-related activities.

Rule 2226.(1) A discharger who has eliminated all or any portion of a discharge area or treatment system or intends to eliminate a discharge area or treatment system shall comply with subrules (2) to (4) of this rule. The department may waive the requirements of subrules (2) and (4) of this rule upon written request by a discharger who intends to temporarily cease the use of a discharge area or treatment system for longer than 9 months.

(2) A discharger shall eliminate all physical threats associated with discharge-related facilities not later than 5 calendar days after use of the facility has ceased.

(3) A discharger shall comply with part 201, if applicable, or part 213, if applicable.

(4) If a discharge is authorized under R 323.2218 or involves the use of a lagoon, including a discharge authorized before the effective date of these rules, then a discharger shall close the facility as follows, unless otherwise authorized by the department:

(a) Not less than 75 calendar days before the cessation of discharge-related activities, a discharger shall representatively characterize the wastewater, soils, sediments, and sludges in the following manner:

(i) A discharger shall representatively characterize the wastewater according to R 323.2220.

(ii) A discharger shall conduct a totals analysis for substances that may be present, given the nature of the discharge, on representative samples of soils affected by the discharge and representative samples of sediment and sludges associated with the discharge. The totals analysis shall be according to procedures described in R 323.2220(3). Samples shall be selected using procedures determined by the department.

(iii) If the totals analysis for a substance is more than 20 times the toxicity characteristic regulatory level under part 111, then a discharger shall conduct a toxicity characteristic leaching procedure according to EPA method 1311 on representative samples of the soils, sediments, and sludges, as appropriate. EPA method 1311 is found in the EPA document entitled "Test Methods for the Evaluation of Solid Waste, Physical-Chemical Methods," SW-846, 3rd Edition, September 1986, as updated through the effective date of these rules. EPA method 1311 is adopted in these rules by reference and is available for inspection at the Lansing office of the department of environmental quality, waste management division. EPA document SW-846 and updates may be purchased from the United States Government Printing Office, Superintendent of Documents, P.O. Box 371954, Pittsburgh, Pennsylvania 15250-7954, or the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$319.00, plus shipping and handling.

(b) Within 30 days of completing the characterization, a discharger shall submit a closure plan meeting the requirements of subdivision (c) of this subrule to the department for review and approval. The closure plan shall include a schedule for implementation of closure activities as follows:

(i) Within 45 calendar days of receipt, the department shall approve the closure plan,

approve the plan with modifications, or deny the plan. If a plan is denied by the department, then a discharger shall resubmit the plan within 30 days.

(ii) Implementation of the closure plan shall be initiated within 30 calendar days of approval and shall be completed within 1 year.

(c) Closure activities shall comply with the following provisions, as applicable:

(i) If the level of a contaminant in the groundwater qualifies the site as a facility as defined by part 201, then the discharger shall comply with the requirements of part 201 with respect to the groundwater.

(ii) If the groundwater exceeds a standard established for criteria by the department under section 21304(a) of the act, then a discharger shall comply with the requirement of part 213 with respect to the groundwater.

(iii) If the characterization of wastewater remaining at the cessation of the discharge indicates that wastewater concentrations exceed a standard of R323.2222, then a discharger shall treat and dispose of the wastewater as authorized by this part or remove the wastewater from the site to an approved wastewater treatment plant for treatment and disposal.

(iv) Any sediments and sludges shall be managed in accordance with part 111 or part 115, as appropriate.

(v) Soils associated with the discharge shall be managed in accordance with part 111, part 115, or part 201, as appropriate.

(d) The department may require postclosure monitoring activities to evaluate the effectiveness of closure activities.

(e) A discharger shall notify the department before implementing activities described in the approved closure plan and certify completion of the approved closure plan. One of the following shall certify completion of the plan:

(i) An engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being ? 339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code.

(ii) A professional geologist certified by the American Institute of Professional Geologists, 7828 Vance Drive, Suite 103, Arvada, Colorado 80003.

(iii) A professional hydrologist certified by the American Institute of Hydrology, 2499 Rice Street, Suite 135, St. Paul, Minnesota 55113.

(iv) A groundwater professional certified by the National Ground Water Association, Association of Groundwater Scientists and Engineers Division, 601 Dempsey Road, Westerville, Ohio 43081.

(v) Another groundwater professional certified by an organization approved by the department.

R 323.2227 Discharger compliance responsibilities.

Rule 2227.(1) If, during the term of an authorization to discharge granted under this part, monitoring data indicate that a limit on the concentration of a substance in groundwater or effluent has been exceeded, then a discharger shall do all of the following:

(a) Notify the department, by written instrument within 7 calendar days of making the determination, that a limit has been exceeded. The notification shall include all of the following information:

- (i) The name of any substance for which a limit was exceeded.
- (ii) The concentration at which the substance was found.
- (iii) The location or locations at which the limit was exceeded.

(b) Within 14 days of making the determination that a limit has been exceeded, resample the monitoring location at which the limit was exceeded as specified in a permit issued under these rules.

(c) Within 60 calendar days of making the determination that a limit has been exceeded, submit a report that includes all of the following information:

- (i) Results of the confirmation sampling.
- (ii) An evaluation of the cause for the limit being exceeded and the impact of that event to groundwater.
- (iii) A proposal detailing steps taken or to be taken to prevent recurrences.

(d) Take actions as may be required by the department under subrule (2) of this rule.

(2) If the department determines that a limit on the concentration of a substance in effluent or groundwater has been exceeded, then the department may require the discharger to undertake 1 or more of the following activities:

(a) Change the monitoring program, including increasing the frequency of effluent monitoring or groundwater sampling, or both.

(b) Develop and implement a groundwater monitoring program if one is not in place. A groundwater monitoring program established under this provision shall comply with R 323.2223(2).

(c) If the discharge is in a designated wellhead protection area assess the affects of the discharge on the public water supply system.

(d) Review the operational or treatment procedures, or both, at the facility.

(e) Define the extent to which groundwater quality exceeds the applicable criteria established by the department under section 20120a(1)(a) of the act, if applicable, or under section 21304(a) of the act, if applicable.

(f) Revise the operational procedures at the facility.

(g) Change the design or construction of the wastewater operations at the facility.

(h) Initiate an alternative method of waste treatment or disposal.

(i) If the standard for the substance is established by R 323.2222(5), reduce or eliminate use of the substance.

(j) Close the facility or end the discharge that resulted in the applicable standard being exceeded.

(k) Remediate contamination to comply with the terms of section 20120a and b of the act, if applicable, or section 21304(a) of the act, if applicable.

(3) If the department determines there is a change in groundwater quality from a normal operating baseline that indicates the concentration of a substance in groundwater may exceed an applicable limit, then the discharger shall take the following actions if required by the department:

(a) Change the monitoring program, including increasing the frequency of effluent sampling or groundwater sampling, or both.

- (b) Review the operational or treatment procedures, or both, at the facility.

R 323.2228 Initial response.

Rule 2228.(1) A discharger who is required by R 323.2222(5)(b)(i) or (c)(ii) to take initial response shall do all of the following:

- (a) Confirm the initial sampling result and notify the department as described in R 323.2227(1)(a) and (b).

- (b) Within 60 calendar days of determining that initial response is required, submit a report that includes all of the following:

- (i) Results of confirmation sampling.

- (ii) An evaluation of the cause for the need for initial response.

- (iii) A plan detailing steps to be taken to reduce the concentration of the substance in the effluent or groundwater below the concentration necessary for initial response. The plan shall include a schedule that is the shortest time practicable, but not more than 1 year, for achieving the reduction. If, based on groundwater velocity, the effect of actions to be taken in the plan will not be measurable in groundwater within 1 year, then the plan shall correlate groundwater concentrations of the substance of concern with effluent concentrations and be designed to achieve necessary reductions in effluent concentrations within as short a time as practical, but not more than 1 year.

- (c) Within 15 calendar days of submitting the plan required in subdivision (b)(iii) of this subrule, implement the plan taking into account any comments by the department.

- (d) Complete the plan described in subdivision (b)(iii) of this subrule, in the time described in that subdivision, unless either of the following occurs:

- (i) The discharger demonstrates, to the satisfaction of the department, that the concentration of the substance has fallen and will remain below the level necessary for initial response because of steps already taken. If the demonstration satisfies the department, then the discharger need not take any additional steps identified in the plan to reduce concentrations of the substance.

- (ii) The concentration of the substance exceeds the limit described in R 323.2222(5)(b)(ii) or (c)(i), in which case the discharger shall comply with R 323.2227.

- (e) If initial response is still necessary at the completion of the plan described in subdivision (b)(iii) of this subrule, describe in a second plan further steps to reduce the concentration of the substance below the level at which initial response is necessary. Development and implementation of the plan shall conform with subdivisions (b)(iii), (c), and (d) of this subrule.

- (f) If the initial response is not successful as specified in subrule (2) of this rule, undertake the following activities as required by the department:

- (i) If the discharge is in a designated wellhead protection area, assess the effects of the discharge on the public water supply system.

- (ii) Review the operational or treatment procedures, or both, at the facility.

- (iii) Revise the operational procedures at the facility.

- (iv) Change the design or construction of the wastewater operations at the facility.

- (v) Initiate an alternative method of waste treatment or disposal.

- (vi) Reduce or eliminate use of the substance.

(2) An initial response is not successful if the concentration of the substance is above the concentration described in R 323.2222(5)(b)(i) or (c)(ii) at the earlier of the following events:

- (a) When the plan described in subrule (1)(e) of this rule has been fully implemented.
- (b) Two years from the date the report described in subrule (1)(b) of this rule was due to be submitted to the department.
- (3) A discharger who is in compliance with initial response requirements described in this rule is not subject to the civil fine described in section 3115(1) of the act, if the substance does not exceed the limit described in R 323.2222(5)(b)(ii) or (c)(i).

R 323.2229 Treatment technology-based standards.

Rule 2229.(1) The treatment technology-based standard described in R 323.2222(5)(b) for a substance listed in table 101 shall be the concentration specified in table 101.

(2) The department may specify a treatment technology-based standard for an organic substance in a permit issued under R 323.2218 if the applicant, using published documentation or verified field testing, demonstrates that the treatment technology achieves the lowest concentration possible in the discharge.

(3) The department shall update table 101 on a periodic basis, but at least once every 3 years.

R 323.2230 Treatment system requirements.

Rule 2230. A treatment system described in R 323.2216(3) shall be in compliance with all of the following requirements:

(a) The treatment system shall have sufficient hydraulic capacity to treat organic or inorganic loading so that the discharge receives physical, chemical, biological treatment or a combination of treatments to meet the standards of R 323.2222. Subsequent to construction of treatment facilities built under this rule, a discharger shall obtain certification by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code, that the treatment system complies with this requirement. The certification shall be available for inspection by the department.

(b) Wastewater sludge shall be disposed of in accordance with part 115 or land applied in accordance with applicable state and federal law.

(c) Operation of the treatment system shall be under the supervision of an operator certified pursuant to section 3110(1) of the act for an industrial or commercial entity or section 4104 of the act for a sewage treatment works operated by a municipality.

(d) A discharger shall maintain all treatment or control facilities or systems installed or used by the discharger to achieve compliance with this rule in good working order and operate the facilities or systems as efficiently as possible.

(e) A discharger shall have an operation and maintenance manual for the wastewater treatment facility. The manual shall be used by the certified operator of the facility as a guide for facility operation and maintenance. The operation and maintenance manual shall include all of the following information:

(i) The function, start-up, shutdown, and periodic maintenance procedures for each unit process and item of mechanical and electrical equipment.

(ii) The appropriate response or facility adjustment to minimize the impact of an emergency situation so as to facilitate rapid implementation of a correct response during emergencies.

(iii) A monitoring program to monitor process efficiency.

(iv) The details of how inspections will be conducted and a schedule for the inspection of

collection system and pump stations, where applicable.

(v) The periodic maintenance procedures for the collection system and pump stations, where applicable.

(vi) Procedures for the routine maintenance and inspection of lagoons and equipment used for irrigation, where applicable.

R 323.2231 Certain treatment systems; design, operation, maintenance, limitation, and monitoring.

Rule 2231.(1) A treatment system described in R 323.2216(3) that involves lagoon storage and land treatment shall be designed, operated, maintained, limited, and monitored in accordance with all of the following provisions:

- (a) The lagoon liner shall meet the requirements of R 323.2237.
- (b) The minimum storage volume of the lagoon system shall be $\frac{1}{2}$ of the annual influent flow.
- (c) The lagoon system shall be a minimum of 2 cells as follows:
 - (i) Cell 1 shall not exceed a maximum depth of 6 feet.
 - (ii) Cell 2 shall not exceed a maximum depth of 8 feet.
 - (iii) Subsequent cells shall not exceed a maximum depth of 10 feet.
- (d) A lagoon system that has mechanical aerators shall meet all of the following criteria:
 - (i) The lagoon system shall be a minimum of 2 cells.
 - (ii) A minimum of 2 mg/l dissolved oxygen shall be maintained in the primary cell.
 - (iii) The maximum depth of secondary cells shall not exceed 10 feet.
- (e) A lagoon shall have security fencing and warning signs.
- (f) Wastewater disposal shall be by means of land application to a suitable crop in accordance with R 323.2233.
- (g) Effluent may be discharged from May 1 through October 15, unless alternative dates are approved by the department.
- (h) A discharge shall occur only from an isolated cell. An isolated cell is one that has not received untreated wastewater at least 30 calendar days before a discharge.
- (i) A discharger shall inspect the lagoon facilities weekly and maintain an inspection log unless otherwise authorized by the department.
- (j) A discharger shall meet all of the following requirements when drawing down a cell for transfer or discharge unless otherwise authorized by the department:
 - (i) Water discharged or transferred shall be removed from the surface 2 feet of the cell at a rate of less than 1 foot per day.
 - (ii) A discharger shall maintain a minimum of 2 feet of freeboard in all cells at all times.
 - (iii) A discharger shall maintain a minimum of 2 feet of water in all cells at all times.
- (k) A discharger shall implement a facility maintenance program that, at a minimum, incorporates all of the following management practices unless otherwise authorized by the department:
 - (i) Vegetation shall be maintained at a height not more than 6 inches above the ground on lagoon dikes.
 - (ii) Not more than 10% of the water surface shall be covered by floating vegetation and not more than 10% of the water perimeter may have emergent rooted aquatic plants.
 - (iii) Dikes shall be inspected for evidence of erosion and animal burrowing. Damage due to erosion or animal burrowing shall be corrected immediately and steps taken to prevent occurrences in the future.
- (iv) The occurrence of any of the following shall be minimized and immediate steps shall

be taken to eliminate each occurrence:

- (A) Scum.
- (B) Floating sludge.
- (C) Offensive odors.
- (D) Insect infestations.
- (E) Septic conditions.

(2) A treatment system which is described in R323.2116(3) and which does not involve land treatment, such as a sequencing batch reactor, oxidation ditch, or activated sludge with denitrification capabilities, shall meet the following requirements, as applicable:

(a) A system that does not have a minimum storage volume of $\frac{1}{2}$ the annual influent flow shall comply with both of the following provisions:

- (i) Meet the requirements of R 323.2222 in the effluent.
- (ii) Have a contingency plan to deal with periods of upset, mechanical malfunctions, and routine maintenance while maintaining compliance with this part.

(b) A sequencing batch reactor system shall have a minimum of 2 treatment tanks.

R 323.2232 Monitoring and limiting certain discharges.

Rule 2232. A discharge authorized under R 323.2216(2) or (3) shall be limited and monitored by the discharger as follows:

(a) Flow shall be measured.

(b) Unless otherwise approved by the department under subdivision (d) of this rule, grab samples shall be collected and analyzed twice each month for the following parameters:

- (i) Ammonia-nitrogen.
- (ii) Nitrate-nitrogen.
- (iii) Nitrite-nitrogen.
- (iv) Sodium.
- (v) Chloride.
- (vi) Phosphorus.
- (vii) The pH.
- (viii) Dissolved oxygen for a primary cell described in R323.2231(1)(d)(ii).

(c) For a discharge authorized under R 323.2216(3), the effluent limitations are as follows:

(i) Total inorganic nitrogen is limited to 20 mg/l in the effluent if the discharge is done under R 323.2233 and R 323.2234 or R 323.2235.

(ii) Total inorganic nitrogen is limited to 5 mg/l in the effluent if the discharge is done under R 323.2233 and R 323.2236.

(iii) Sodium is limited to 150 mg/l in the effluent.

(iv) Chloride is limited to 250 mg/l in the effluent.

(v) Total phosphorus is limited to 5 mg/l in the effluent if the discharge is done under R 323.2233 and either R 323.2234 or R 323.2235.

(vi) Total phosphorus is limited to 2 mg/l in the effluent if the discharge is done under R 323.2233 and R 323.2236.

(vii) The pH of the effluent shall be between 5.5 and 10.0 standard units.

(d) The application rate of the discharge shall be determined by direct measurement or calculation. If the discharge is done in accordance with R323.2233 and R 323.2234 or R 323.2235, then the flow volume shall be reported in gallons per day and the application rate of the discharge shall be reported both in units of inches per day and inches per week. If the discharge is done in accordance with R323.2233 and R 323.2236, then the

flow volume shall be reported in gallons per day.

(e) Alternative measurement frequencies may be approved by the department if the discharger demonstrates that results are representative of the discharge.

(f) Monitoring reports shall be submitted in accordance with R 323.2225.

R 323.2233 Land treatment of wastewater; requirements.

Rule 2233.(1) For the purposes of this rule, the land treatment of wastewater shall be categorized into 1 of 3 of the following general processes:

- (a) Slow rate.
- (b) Overland flow.
- (c) Rapid infiltration.

(2) If land application is considered part of the overall treatment to meet the standards of R 323.2222, then a discharger shall incorporate the use of slow rate or overland flow processes in the design.

(3) A land treatment system shall comply with the general requirements for land treatment systems as described in subrule (4) of this rule as well as the specific requirements applicable to the type of land treatment system provided in R 323.2234 to R 323.2236. If a land treatment system includes a combination of 1 or more of the processes, then the overall system shall comply with the general requirements in subrule (4) of this rule and its individual component processes shall comply with the applicable requirements provided in R 323.2234 to R 323.2236. A discharger shall provide detailed design data, as described in this rule, to the department upon request.

(4) A land treatment system shall meet all of the following requirements:

(a) The system shall be designed, constructed, and operated as follows:

(i) The system shall be designed and constructed to prevent surface runoff from either entering or exiting the system.

(ii) The system shall be designed and constructed to provide even distribution of wastewater during application. A header ditch, where used, shall be designed and constructed to allow for complete drainage after each wastewater loading or shall be lined to prevent seepage.

(iii) If vegetative cover is utilized and is considered part of the overall treatment system, then the design and construction of the system shall allow for the mechanical harvesting of vegetative cover.

(iv) The system shall be designed, constructed, and operated to allow an appropriate loading cycle. An appropriate loading cycle allows time between loadings for all of the following:

(A) Soil organisms to biologically decompose organic constituents in the wastewater.

(B) Organic solids on the soil surface to decompose.

(C) The soil to become aerated.

(D) Vegetative cover to utilize available nutrients provided through the application of the wastewater.

(E) Soil conditions to become unsaturated and aerobic.

(F) Harvesting operations to occur at appropriate times.

(v) The design hydraulic loading or application rate, whether daily, monthly, or annual, shall not be more than 7% of the permeability of the most restrictive soil layer within the solum over the area of the discharge as determined by the saturated hydraulic conductivity method or 12% of the permeability as determined by the basin infiltration method. The design annual hydraulic loading rate shall not be more than 3% of the permeability of the

solum when determined by either the cylinder infiltration method or air entry permeameter test method. The methods referenced in this paragraph for determining soil permeability are adopted by reference in these rules and are contained in the publication entitled "Methods of Soil Analysis, Part 1, Physical and Mineralogical Properties," Second Edition, American Society of Agronomy, 1986. The publication may be purchased from the American Society of Agronomy, 677 South Segoe Road, Madison, Wisconsin 53711-1086, or the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$65.00, plus shipping and handling. A discharger, if utilizing published information, shall determine the methodology used to measure the reported hydraulic conductivity. If published information is utilized and if it is given as a range of expected values, then a discharger shall use the minimum value given the most restrictive soil layer within the solum when calculating the hydraulic loading or application rate.

(vi) The system shall be designed, constructed, and operated so as to prevent the development of sodic conditions within the solum of the discharge area. Sodic conditions are considered to exist in the solum when the exchangeable sodium percentage, which is the percentage of the cation exchange capacity of a soil occupied by sodium, is more than 15%. The exchangeable sodium percentage shall be calculated by dividing the quantity of exchangeable sodium in the solum, in milliequivalents per 100 grams of soil, by the cation exchange capacity, also in milliequivalents per 100 grams of soil, multiplied by 100.

(b) If phosphorus adsorption within the solum or unsaturated soil column is part of the overall treatment process, then the system shall be designed as follows:

(i) The available phosphorus adsorptive capacity of the solum or unsaturated soil column from within the discharge area shall be sufficient to provide the necessary treatment to ensure that the applicable limit established in the permit is not exceeded for the duration of the permit.

(ii) The loading cycle shall be designed so as to provide the necessary contact time within the solum or unsaturated soil column required for phosphorus to be removed from the applied wastewater through adsorption processes.

(iii) The available phosphorus adsorptive capacity of the discharge area shall be determined through either of the following methods:

(A) By subtracting phosphorus levels of the unsaturated soil column, determined through on-site Bray-P1 analysis, from published phosphorus adsorption capacity data for the solum found within the discharge area. The method and procedure for the Bray-P1 analysis referenced in this subparagraph are contained in the publication entitled "Methods of Soil Analysis, Part 3 - Chemical Methods," American Society of Agronomy, 1996. The publication is adopted by reference in these rules and may be purchased from the American Society of Agronomy, 677 South Segoe Road, Madison, Wisconsin 53711-1086, or the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$65.00, plus shipping and handling.

(B) By subtracting phosphorus levels of the unsaturated soil column, as determined through on-site Bray-P1 analysis, from the phosphorus adsorption maximum as determined through Langmuir isotherm analysis of on site soils, after adjustments for the concentration of phosphorus in the effluent and fraction of utilization within the solum are made. The method and procedure for determining phosphorus adsorption maximum through Langmuir isotherm analysis referenced in this subparagraph are contained in the publication entitled "Phosphate Sorption Isotherms for Evaluating Phosphorus Requirements of Soils," Soil Science Society of America Journal, Volume 34, American

Society of Agronomy, 1970. The publication is adopted by reference in these rules and may be purchased from the American Society of Agronomy, 677 South Segoe Road, Madison, Wisconsin 53711-1086, or the Michigan Department of Environmental Quality, Waste Management Division, P.O.Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$65.00, plus shipping and handling.

(iv) Unless otherwise specified in a permit issued under R323.2216 or R 323.2218, each individual discharge area shall be annually sampled in accordance with the publication entitled "Michigan State University Extension Bulletin E498" or other method approved by the department, and the samples shall be analyzed for cation exchange capacity, available Bray-P1 phosphorus, pH, and sodium. Bulletin E-498 is available from Michigan State University Bulletin Office, 10-B Agriculture Hall, Michigan State University, East Lansing, Michigan 48824, at a cost of 25 cents per copy at the time of adoption of these rules. A single copy is free to Michigan residents. A copy of bulletin E-498 may also be obtained from the Michigan Department of Environmental Quality, Waste Management Division, P.O. Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of 25 cents, plus shipping and handling.

(c) All of the following operation and maintenance requirements shall be met:

(i) Portions of the wastewater distribution system shall be capable of being taken out of service for maintenance and other operational activities and to provide rest to portions of the irrigation area without disrupting applications to other areas of the system.

(ii) All areas within a system shall be accessible for maintenance equipment.

(iii) For slow rate and overland flow treatment systems, the pH of the plow layer within the discharge area shall be maintained between 6.0 and 7.5 standard units.

(iv) The discharge to a land treatment system shall be limited so that the discharge volume combined with the precipitation from a 10-year frequency, 24-hour duration rainfall event does not overflow the designed discharge area.

(d) For the purposes of the issuance of a permit under R323.2218, in determining discharge limitations, the department shall consider all of the following:

(i) Past operating performance.

(ii) The ability of the solum or the unsaturated soil column to treat the pollutants of concern in the discharge.

(iii) Hydrogeologic characteristics of the site.

(iv) Other pertinent information.

R 323.2234 Slow rate land treatment.

Rule 2234.(1) Slow rate land treatment is the application of wastewater to a vegetated land surface with the applied wastewater being treated as it flows through the plant and soil matrix. A portion of the flow is expected to percolate to the groundwater while the remainder is utilized by plants or lost through evaporation. A facility utilizing a slow rate system for the land treatment of wastewater shall design and construct the system under this rule.

(2) The wastewater loading volume shall be designed so that the wastewater will be absorbed and held within the effective rooting zone of the vegetative cover established on the site receiving the wastewater.

(3) The daily application rate, in inches per day of the wastewater, shall not exceed the permeability as determined by R 323.2233(2)(a)(v) multiplied by 24.

(4) The header ditch drainage and the grading of the furrows, where utilized, shall be tested for equal liquid distribution before seeding.

(5) The system shall be seeded with a mixture of perennial vegetative cover, which are grasses such as reed canary grass, tall fescue, and orchard grass, alone or in combination with legumes, such as clover, alfalfa, and birdsfoot trefoil, suited to the climate and the soil moisture conditions created as a result of the application of wastewater in accordance with the designed loading cycle. The department may approve alternative vegetative cover on a case-by-case basis, but may impose restrictions based upon the characteristics of the proposed alternative.

(6) All furrow side slopes, where present, shall be designed and constructed to allow for periodic maintenance and or mechanical harvesting of vegetative cover.

(7) The depth of the furrows of a ridge and furrow system, when utilized, shall be adequate to contain the highest proposed furrow stream. The furrow stream is the volume, in gallons per unit time, usually per minute, of wastewater discharged into the furrow.

R 323.2235 Overland flow treatment.

Rule 2235.(1) Overland flow treatment of wastewater is the application of wastewater to the upper reaches of grass-covered slopes with excess wastewater collected at the end of the slopes for reapplication. A facility utilizing an overland flow system for the land treatment of wastewater shall design and construct the system under this rule.

(2) A system may be constructed on a site that has slowly permeable soil, which is soil that has 50% or more of the soil particles pass through a no.200 sieve, except that more permeable or coarser textured soil may be approved on a case-by-case basis depending on system design and wastewater strength. Suitable soil shall extend not less than 3 feet below the soil surface.

(3) The system shall consist of an adequate number of cells that can be alternately loaded and rested, unless there is adequate storage or pretreatment, to allow loading and resting of a single cell.

(4) The shape of each cell within the system shall be designed to minimize soil disturbance when constructing the system.

(5) For a system utilizing more than 1 cell, the wastewater distribution system shall be designed and constructed so that individual cells within the system can be taken out of service for resting or other purposes without disruption to the remaining cells.

(6) The header ditch drainage and the grading of the furrows, where utilized, shall be tested for equal liquid distribution before seeding.

(7) All embankments and dikes shall be properly seeded in order to establish appropriate vegetative cover for the purpose of erosion prevention.

(8) All furrow side slopes, where present, shall be designed and constructed to allow for the periodic maintenance and mechanical harvesting of vegetative cover.

(9) The depth of the furrows of a ridge and furrow system, when utilized, shall be adequate to contain the highest proposed furrow stream. The furrow stream is the volume, in gallons per unit time, usually per minute, of wastewater discharged into the furrow.

(10) The system shall be seeded with perennial grass, or other vegetation approved by the department as capable of high nutrient uptake, and be suited to the climate and soil moisture conditions created by the operation of the system. Vegetative cover, not less than 2 inches in length and capable of preventing significant erosion to furrows or embankments, shall be established before the system is used for wastewater treatment.

R 323.2236 Rapid infiltration.

Rule 2236.(1) Rapid infiltration is the application of wastewater to areas of moderately to highly permeable soil. The majority of applied wastewater percolates through the soil, and the treated effluent drains naturally to groundwater. The effluent is minimally treated as it travels through the soil matrix. Vegetation is not typically a part of the overall treatment process. The utilization of vegetation or its presence within a discharge area typically does not interfere with system performance. A facility utilizing rapid infiltration systems for the land treatment of wastewater shall design and construct the system under this rule.

(2) The system shall consist of 2 or more cells or absorption areas that can be alternately loaded and rested or consist of 1 cell or absorption area preceded by an effluent storage or stabilization pond system. If only 1 cell or absorption area is provided, then the storage or stabilization pond shall be operated on a fill and draw basis and have sufficient capacity to allow intermittent loading of the cell or absorption area.

(3) For a system that has more than 1 cell or absorption area, an individual cell or absorption area of the system shall be capable of being taken out of service without disrupting application to other cells or absorption areas of the system.

(4) An appropriate hydraulic loading cycle shall be developed and implemented to maximize long-term infiltration rates and allow for periodic maintenance.

R 323.2237 Wastewater treatment or storage lagoons.

Rule 2237.(1) Except as provided in subrule (4) of this rule, wastewater treatment or storage lagoons associated with a discharge shall consist of a composite liner with a base that meets the requirements of subrule (2) of this rule and a liner as described in subrule (3) of this rule.

(2) The base of the composite liner required by this rule shall be a natural soil barrier that meets the criteria of subdivision (a) of this subrule, a compacted soil barrier that meets the criteria of subdivision (b) of this subrule, or a geocomposite clay liner that meets the criteria of subdivision (c) of this subrule as follows:

(a) A natural soil barrier used as a base in a composite liner system shall meet all of the following requirements:

(i) The natural soil shall be free of sand lenses and not less than 10 feet thick.

(ii) The soil shall have a saturated vertical hydraulic conductivity of not more than 1×10^{-7} centimeters per second. The hydraulic conductivity of the soil shall be determined using ASTM method D5084-90, which is adopted by reference in R 323.2238, as modified by the department in R 299.4920. If flexible wall permeameters are used, then confining pressures shall be equivalent to the minimum pressure expected after the lagoon is placed in service.

(iii) For abovegrade construction or if the lagoon liner base does not extend to the ground surface, perimeter dike walls shall be constructed using a soil that meets the criteria of subdivision (b)(ii) and (iii) of this subrule and keyed into the natural soil base.

(iv) The natural soil liner surface shall be prepared for placement of the flexible membrane liner (FML) to remove the potential for failures to the FML. (v) Alternative test and investigative methods may be approved by the department.

(vi) An engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being ? 339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code, shall certify to the department, through spatially random testing and measurements, that the requirements of this rule were met during installation of the natural soil base of the composite liner. At least 1 soil test shall be conducted and an additional test shall be

conducted for every 5,000 cubic yards placed and when the texture of the soil changes.

(b) A compacted soil liner used as a segment of the composite liner system shall meet all of the following requirements:

(i) The compacted soil liner shall have a minimum thickness of 2 feet.

(ii) The relationship between hydraulic conductivity, moisture, and density shall be established with laboratory testing for the source of clay that will serve as the compacted clay portion of the composite liner. The relationship shall be determined using either the modified proctor test, ASTM D1557-91, which is adopted by reference in R323.2238, or the standard proctor test, ASTM D698-91, which is adopted by reference in R323.2238.

(iii) Each lift shall be thoroughly and uniformly compacted to achieve a hydraulic conductivity of not more than 1×10^{-7} centimeters per second based upon the density and moisture content determined under subdivision(b)(ii) of this subrule. The hydraulic conductivity of the soil shall be determined using ASTM method D5084-90, which is adopted by reference in R 323.2238, as modified by the department in R 299.4920. If flexible wall permeameters are used, then confining pressures shall be equivalent to the minimum pressure expected after the lagoon is placed in service. Soil shall not be compacted at a moisture content that is less than optimum and shall not be compacted to less than either of the following densities:

(A) Ninety percent of the maximum dry density, as determined by the modified proctor test, ASTM D1557-91, which is adopted by reference in R 323.2238.

(B) Ninety-five percent of the maximum dry density, as determined by the standard proctor test, ASTM D698-91, which is adopted by reference in R323.2238.

(iv) The soil shall be placed so that each lift shall not be more than 6 inches after compaction.

(v) For abovegrade construction or if the lagoon liner base does not extend to the ground surface, perimeter dike walls shall be constructed using a soil that meets the criteria of paragraphs (ii) and (iii) of this subdivision and keyed into the compacted soil base.

(vi) The compacted soil liner surface shall be prepared for placement of the FML to remove the potential for failures of the FML.

(vii) Alternative test and investigative methods may be approved by the department.

(viii) An engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code, shall certify to the department, through spatially random testing and measurements, that the requirements of this rule were met during installation of the compacted soil base of the composite liner. At least 1 soil test of the compacted soil shall be conducted and an additional test shall be conducted for every 5,000 cubic yards placed and when the texture of the soil changes.

(c) A geocomposite clay liner (GCL) used as a segment of a composite liner shall meet all of the following requirements:

(i) The GCL shall be a factory-manufactured hydraulic barrier consisting of sodium bentonite clay supported by geotextiles that are held together by needling, stitching, or adhesives.

(ii) The GCL shall be seamed according to the manufacturer's specifications to prevent leakage at the seams.

(iii) The GCL shall not be laid during a precipitation event and shall be covered immediately by a flexible membrane liner or by another protective cover until the flexible membrane liner can be laid directly over the GCL.

(iv) The GCL shall be installed according to the manufacturer's specifications and quality assurance and quality control plans and shall be certified by an engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan

Compiled Laws, and known as the occupational code, overseeing the installation of the composite liner.

(3) An FML required by this rule shall be placed directly over a liner described in subrule (2) of this rule to form the composite liner. The FML and its installation shall comply with all of the following requirements:

(a) The liner shall be a minimum of 40 mils thick polyvinyl chloride (PVC) or 60 mils thick high-density polyethylene (HDPE). The discharger may utilize other materials and thickness if the department determines before installation, that the proposed material and thickness are sufficient to ensure that the integrity of the liner is not compromised due to contact with the soil base, wastewater, climatic conditions, or the stress of installation or daily operation.

(b) An FML shall be covered immediately after placement by an adequate thickness of soil or other material approved by the department to prevent puncture by equipment and to protect the exposed portion of the FML from degradation by ultraviolet light.

(c) The FML shall be placed upon a foundation or base capable of providing support to the liner and resistance to pressure gradients above and below the liner to prevent slope failure and failure of the liner due to settlement, compression, or uplift.

(d) The FML shall be installed to cover the entire area of earth material that would be in contact with the treated or stored effluent.

(e) An FML shall be placed on slopes that are not more than 25%, unless the owner and operator can demonstrate slope stability for greater slopes.

(f) The field seams of an FML shall meet all of the following requirements:

(i) Seaming shall be done in accordance with the minimum industry standards. The shear strength and peel strength of the seams must be adequate to maintain the integrity of the seam under all operating conditions.

(ii) Horizontal seams shall not occur on side slopes.

(iii) Horizontal seams shall be located not less than 5 feet from the toe of the slope.

(iv) Field seams shall be installed parallel to the line of maximum slope.

(v) The seam area shall be free of moisture, dust, dirt, debris, and foreign material of any kind before seaming.

(vi) Field seaming shall not be done in weather conditions that would adversely affect the integrity of the seam.

(g) An engineer licensed under Act No. 299 of the Public Acts of 1980, as amended, being §339.101 et seq. of the Michigan Compiled Laws, and known as the occupational code, shall certify to the department that all necessary quality assurance testing was conducted to ensure that the FML was installed to meet the conditions of these rules.

(4) The department may approve a storage or treatment lagoon liner that does not meet 1 or more of the requirements of this rule if the applicant demonstrates that the requirements of either of the following provisions are met:

(a) The lagoon holds only wastewater that meets the standards of R323.2222.

(b) The existing system or the proposed design provides equal or greater environmental protection to protection provided by a lagoon liner constructed according to this rule. For an existing system, the demonstration can be made by either of the following:

(i) Through an exfiltration test that demonstrates, to the department's satisfaction, that the lagoon is not leaking at a rate likely to impact groundwater above the standards described in R 323.2222.

(ii) Through monitoring of the groundwater and a demonstration approved by the department that the lagoon has not impacted, and is not likely to impact, groundwater above the standards described in R 323.2222.

R 323.2238 ASTM standards; adoption by reference.

Rule 2238.(1) The following ASTM standards are adopted by reference in these rules:

- (a) D698-91E1, test method for laboratory compaction characteristics of soil using standard effort.
- (b) D1557-91E1, test method for laboratory compaction characteristics of soil using modified effort.
- (c) D1586-84(92)E1, standard method for penetration test and split-barrel sampling of soils.
- (d) D5084-90, standard test method for hydraulic conductivity of saturated porous materials using a flexible wall permeameter.

(2) The standards listed in subrule (1) of this rule may be purchased from the American Society for Testing and Materials, 100 Barr Harbor Drive, West Conshohocken, Pennsylvania 19428, at a cost at the time of adoption of these rules of \$18.00 each. The standards listed may also be obtained from the Michigan Department of Environmental Quality, Waste Management Division, P.O.Box 30241, Lansing, Michigan 48909, at a cost at the time of adoption of these rules of \$18.00 each, plus shipping and handling.

R 323.2240 Table 101; treatment technology standards for certain organic substances.

Rule 2240. Table 101 reads as follows:

Table 101	
<u>Substance</u>	<u>Treatment Technology Standard (ug/l)</u>
1,1,1-trichloroethane	15.
1,2,4-trichlorobenzene	15.
1,2-dichlorobenzene	25.
1,3-dichlorobenzene	25.
1,4-dichlorobenzene	15.
2,4,6-trichlorophenol.....	15.
2,4-dichlorophenol	20.
2,4-dimethylphenol	80.
2-butanone (MEK).....	450.
2-chloronaphthalene	40.
2-chlorophenol	5.
2-methylphenol (o-cresol)	20.
4-methylphenol (p-cresol)	10.
Acenaphthene	40.
Acrolein.....	15.
Aniline.....	60.
Anthracene	40.
Benzoic acid.....	400.
Butyl benzyl phthalate	40.
Chlorobenzene	15.
Chrysene.....	20.
Di-n-butyl phthalate	35.
Di-n-octyl phthalate	25.

Dichlorodifluoromethane	40.
Diethyl phthalate	35.
Dimethyl phthalate.....	35.
Ethylbenzene	25.
Hexachloroethane	25.
Naphthalene.....	15.
Phenol	35.
Pyrene	30.
Styrene	20.
C-1,2-dichloroethylene	5.
T-1,2-dichloroethylene.....	5.
Toluene.....	35.
Xylene (o,m,p).....	35.